The Journal of the
American Medical Association

VOL. XVII. CHICAGO, NOVEMBER 28, 1891. No. 22.

ORIGINAL ARTICLES.

PERSONALITY AS IT AFFECTS THE COURSE OF DRUNKENNESS.

Read before the Section of Medical Jurisprudence and Neurology, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.

BY T. L. WRIGHT, M.D.,
OF BELLEFONTAINE, OHIO.

When the elements of the human character are observed in any individual, there will be perceived a number—sometimes more and sometimes less—of intervening, interrupting, interpolating, constitutional characteristics that, abstractly, are not really necessary to the completeness of human nature. And these characteristics, while non-essential, may nevertheless be, so far as the individual is concerned, dominant and decisive in the aggregate and sum total of life's history.

Such peculiarities in the elements of personality indicate imperfections in the constitutional stamina of separate and distinct persons. In some cases they have been impressed upon the individual by ancestry—pointing to a history of disease, or of profound physical injury, or of mental and moral suffering, or inquietude, or disaster. But whatever these lines in men's characters may be, or whence they come, or what they signify and portend—they are present in a state, to some degree obvious to the expert eye, in every human being now inhabiting the earth.

Of the modifying qualities which may thus impress the nature of man, of course only the more obtrusive receive special notice; and of these, the members of the so called *neurotic family* more particularly demand our present attention. For the alcoholic constitution rightfully belongs to this singular group of incapables; and it is interchangeable with all the other distinctive neurotic traits affecting mankind. The simplification of the elements of matter, through its allotropic capabilities, has its parallel in the great family of the *neuroses*. Carbon, we are told, may exist in separate material forms—as in the diamond, in charcoal, in soot, in the carbonates and in other material substances. In a like manner, one neurotic form may be found masquerading in the features of some other member of the same family—dipsomania being interchangeable with amnesia or epilepsy, or some appearance of insanity; and conversely, these and other neuroses may become—either in the same person, or by heredity, transmuted into dipsomania.

This is not the place to speak of heredity at large. But to deny heredity is to deny parentage. He who cannot perceive both likenesses and contrasts in ancestry and posterity which denote unequivocally lineal descent, is, it seems to me, either blind or of dull apprehension. (*a*). The cast of the eye, the pose of the head, the set of the ears, the shape of the nose, the arch of the brow, the color and texture of the skin, the "cowlick" of the hair—all these and innumerable other special marks, indicate the power of heredity in the *perceptible* construction of the physical organism. (*b*). The mental and moral nature, the general disposition and tastes, the family likes and dislikes, the development of particular inclinations and propensities as life progresses, still more strongly if possible, testify to the reality of heredity. (*c*). Again, diseases tell the unfaltering tale of heredity through the transmission of epilepsy, insanity, heart imperfections, hysteria, dipsomania, somnambulism and a multitude of other undoubted pathological states. They point, not to perceptible and notorious physical conditions of the bodily organism; but they rather denote *imperceptible* changes in the ultimate structure of the brain and nervous system.

The evidence of heredity derived from physical conformation, and also deformation, is *direct*, and comes at once from observations conducted through the perceptive faculties; while the evidence derived through mental and moral properties, and from the transmission and transformation of diseases, is *circumstantial*. It consists of symptoms and indications, and phenomena. It is, therefore, most commonly unimpeachable; for it is composed of coincidences that mutually sustain and illustrate each other.

Heredity, especially the heredity of disease and criminality, is a doctrine as old as humanity—or at least as old as human suffering and guilt. It has been the theme of philosophers and sages

through all the world's history; and it enters largely into the elements of the Christian's hope, as well as the sinner's despair; for, in the disobedience of the progenitor of the human race itself, all mankind were smirched.

The effects of alcohol upon the human constitution may be divided into two classes or groups—those which are obvious to the senses of everybody—and those which are more remote, concealed, and unexpected. Both groups, however, have to do with the whole man—mental, moral, and physical.

Alcohol, for instance, acts openly and within the view of all in exaggerating the egotistic feelings. There is in drunkenness, not only unseemly boasting, and a claim to the possession of qualities in every department of life, superior to others, but there is a tendency to embark in enterprises far beyond the capacity of the person concerned. An habitual indulgence in the use of alcohol, produces a *custom or habit* of asserting pretentious and preposterous claims to excellence and prowess, so that the drinker is eventually degraded into a bragging and besotted imposter and nuisance.

The changes induced in the physiognomy, the speech, and the physical movements of the inebriate are universally recognized. Besides these perceptible bodily disabilities due to alcoholic impressions, there are a number of other notable mishaps that speedily occupy the field of observation. The liver, kidneys, stomach, brain, heart and lungs, show indications of functional—and finally of structural impairment and degeneracy. The interstitial substance throughout the entire organism exhibits a tendency to hyperplasia, although the features of this pathological condition are more pronounced in some localities than in others. Subsequently shrinkage is apt to occur. The consequence is, that a number of organic degenerations are likely to ensue. Nerve fibres in the brain may be implicated and torn in sunder; while the capillaries of the encephalon are, possibly, strangled and obliterated. These, and numberless other physical disasters are amongst the common effects of alcohol. They, and their symptoms, are open to daily inspection and inquiry; and they are liable as a matter of fact, to appear in all constitutions and persons impartially. There are, however, many exceptions of course.

But the usual and open effects of alcohol upon its victims do not stop with the acute or initial stage of inebriety. After a lapse of considerable time, possibly of years, the boasting of the early drinker, so absurd, so empty and frivolous, ceases to merit the name of mere boasting. It descends to the level of habitual and malignant lying. The lofty and assertive egotism, loving and seeking notoriety, is transformed at last, into a sullen and mean selfishness. Stiffened and bent over, his muscles clamped by the shrinkage and indurations induced by alcohol affecting their sheaths, the chronic inebriate drags himself away with a difficult and crawling movement, shunning the sight and society of men. And the great highway he has traveled between the noisy and boisterous beginning of his career, and its woful conclusion, is the broad road of habitual drunkenness; wherein the daily sot staggers along, lonely and despised.

These are the obvious, the *common* characteristics of alcoholic drunkenness. They are often viewed, superficially, of course, as illustrating *all* the essential traits of alcoholism, physical traits, representing incapacity of action, moral traits, representing incapacity of responsibility, mental traits, representing incapacity of discrimination, reflection, choice.

But in real truth, hidden beneath these direct and sensible displays of the alcoholic power, comprehensive and distinctive as they are, there may be discerned other traits of alcoholism, less obtrusive certainly, but probably not less important and far-reaching. Careful attention will reveal the fact that there are many profound and subtile influences exerted by alcohol upon the nature and welfare of man, that are quite imperceptible to the casual observer.

A good deal has been written, and justly too, upon the effects of the different kinds of alcohol on the human constitution. The constitution here meant is that of the average man; the several effects being due to differences in the article applied, and not to personal idiosyncrasies.

For example, it is known that *ethylic* alcohol (C^2H^6O) produces the agreeable and alluring movements of mind and body, that are so seductive to the inebriate. *Amylic alcohol* however, called also *fusel oil* and *potato spirit* ($C^5H^{12}O$), produces very peculiar and serious consequences when mixed (in impure spirits) with the ethylic or common alcohol. It is to this substance that must be chiefly attributed the muscular instability and trembling, together with the profound poisoning of the brain that characterize delirium tremens.

But the purpose now is, not to apply different alcohols to *similar* constitutions, but to apply the common alcohol, that is, a similar (and least poisonous) alcohol, to *different* constitutions. The desire is to view the effects thence flowing upon mind and morals—upon life and responsibility—rather than upon the grosser physical organism.

It has already been noted that through force of the inevitable accidents of time, and the operations of inimical and destructive agencies, the constitutions of men often represent elements that are not essential to the completeness of human nature. These imperfections and obliquities are frequently present in such force and

number, that they greatly influence, and may even chiefly direct the course of human life. The nature of some of these disturbing constitutional attributes may be seen in the several members of the neurotic family of diseases. It is not necessary to enumerate the individuals composing it. But it may be said that besides the characteristic members, there is a great multitude of persons in whom the neurotic features are imperceptibly shaded off into more or less indefinite degrees of completeness, until in fact, they are obvious only to the eye of the skilful and practiced observer.

In every community the neurotic family has many representatives bearing many names; and there are also relatives of that family that are as yet unnamed. Take for example the man wholly intent on piling up a mountain of wealth; riches that he neither can use, feel, taste, or in any conceivable manner enjoy in this life, nor take with him when he dies.

In such a life there is absolutely no rational object at stake. The man is a "crank." He is possessed of an undoubted neurotic constitution. He is closely connected with the insane family—perhaps a member of it. Not infrequently, amongst his offspring there will appear an idiot, or imbecile, or scrofula, or deformity. Quite commonly there are drunkards—one or more—true dipsomaniacs; and possibly a suicide. It is not exclusively the allurements and opportunities of wealth that so frequently wreck the families of rich men. It is owing, possibly to the inherited neurotic constitution, transmuted in posterity, from the craze of money getting, into the repulsive forms of epilepsy, dipsomania, and the moral insanity of useless and unsatisfying, but universal profligacy. True, sometimes the offspring continues in the paternal groove—and the neurosis of colossal fortune building goes on. But such is not the rule. The neurotic *bent* takes the form of unbalanced nerve equilibrium—*moral insensibility* being connected with *physical hyperæsthesia*. Here is, indeed, sensuality unrestrained.

All this is simply in illustration of the fact, that the neurotic constitution abounds in society more plentifully than generally has been supposed.

The effects of alcohol upon the mind and conduct, no doubt vary in some particulars, in each individual from its effects elsewhere.

But the gross and disgusting qualities of drunkenness that are common to all intoxicated persons, are apt to absorb the attention, to the exclusion of nice, but obscure idiosyncrasies.

There are, however, several specific qualities that alcohol impresses upon certain constitutions, that are not peculiar to drunkenness in general. These in fact are of frequent occurrence—and are of very great significance.

1. Some inebriates invariably exhibit signs of irrepressible mania when under the influence of alcohol. Here is the true *mania a potu*—a designation often misapplied to delirium tremens. This is a condition readily developed in certain persons. The speech is loud and incessant; nothing can stop it. If admonition or even force is employed, the ceaseless chattering continues unabated. The topic may change, but not the talk. Frequently this state of alcoholic mania displays itself by producing an inclination, almost uncontrollable, to scream at the top of the voice and "make the welkin ring." The inebriate may not be entirely lost to the impropriety of this proceeding, and may pause a brief moment or two, and wonder in his silly mind what people will think of it—whether they will not think he is drunk. But all such sage reflections are speedily lost and swallowed up in the burning desire to "give them one yell anyhow." And so drunkards go up and down the streets, singly or together, shouting, singing and yelling to the utmost limits of their vocal capacity.

But these persons do not always confine their pranks to noisy demonstrations. Very often there appears a strong desire to "smash things."

Windows are broken, doors kicked down, furniture ruined, walls defaced, crockery thrown into the streets, and the spirit of utter destruction reigns supreme. All these things may take place without the slightest incentive of anger or malice. It is an instinctive mania of demolition; and it seems to be simply a process of occupying the attention, and relieving or *staying* morbid cerebral exaltation, by the act of *doing something*. It is scarcely necessary to say that positive and abrupt interference with the movements of an individual who is in such a condition of mania, might prove to be dangerous. It would be liable to arouse a feeling of ungovernable and insane rage.

2. There are many persons in whom alcohol develops a peculiar disposition that is dangerous to any community in which they live. These individuals, when under the influence of alcohol are morose, revengeful, homicidal. Such a spirit may exist in so great a degree of intensity as to amount to actual mania. It is by no means uncommon to read of murders committed in sheer wantonness by persons laboring under intoxication. Such individuals, without offense being given, without a personal acquaintanceship even, or a word being passed either way, will perhaps shoot down some one who, by chance, happens to be in their presence. But the homicidal tendencies of inebriety do not display themselves usually in quite so unexpected and truculent a manner. There are persons in every community who are known to be dangerous characters when drunk; and when they are perceived to be indulging in drink, the public invariably feels that serious trouble is liable to ensue.

These folks may be quiet and pleasant enough when sober, but as drink mounts to their brains, they become implacable and defiant. The memory of old slights and feuds, perhaps latent and for a long time forgotten, suddenly revives. The inebriate asserts that he neither fears nor regards consequences. He would "as soon die as live anyhow." An intoxicated individual possessed of such a disposition, is in a state of mind that is a menace to the public safety. He is really in a condition of insane rage—without limit or abatement—and thinks of nothing but killing and murder as remedies for all his fancied ills.

3. Other men again, possessed of constitutions peculiarly modified by extraneous circumstances, become affected, when under the influence of alcohol, with a nervous condition called by some *alcoholic trance*. Events that take place during the continuance of this remarkable state of the brain and mind, are afterwards but dimly remembered. Sometimes no recollection whatever of them is retained. This mental situation is brought on largely by the anæsthetic property of alcohol. The anæsthesia of alcohol so benumbs the sensibilities of the life of external relation that the inward movements of the organism, to some degree, come into consciousness; at the same time, common sensation and the perceptive faculties remain in abeyance. Ordinarily, in health, the reverse of this is true. Sensations and the perceptive functions engross the attention, and become the subjects of thought, while the inward movements of the organism are unperceived. This peculiar modification of the senses through the influence of alcohol may result in serious consequences. The objective and subjective sensibilities appear sometimes so indefinite, so mixed and intermingled, that one may be mistaken for the other, and the judgment be thereby misled. It is not difficult to see how motive and conduct may be influenced by the misinformation of the mind derived from organic sources.

No sensation or perception is absolutely trustworthy in itself. It must be attested by other senses; and the several comparisons must be weighed and accepted by the judgment before it is received in the mind as undoubted knowledge. But it is obvious that the dim and incomplete suggestions of automatic or subjective life cannot afford these necessary testimonies and proofs of their own accuracy. The mind, therefore, reasoning from the data of a false and impaired consciousness, is dragged from its moorings, and it accepts as facts the unsubstantial phantoms of a wayward and uncurbed imagination.

4. Leaving now the consideration of the peculiarities of individual constitutions which modify the phenomena and responsibility of the drunken state, attention is called to some fundamental traits which characterize races, tribes and families, and which impress distinctive features upon inebriety.

The *Celt* possesses a physical organization in the highest degree sensitive. His appetites are strong, his aspirations are unbounded, his ideals are the exaggerations of fancy, and much beyond the reach of the actual. The Celt is frequently seen either in a state of radiant hope or gloomy despair. If he is an inebriate at all, he is an excessive drunkard. There is no moderation in his cups. His time is passed in getting drunk or becoming sober. His is a character of contradictions and extremes. In the Celt, the pleasures of sense are not always satisfied by their reasonable gratification. Sensuality in him often is bounded only by the limits of physical endurance.

When such a nature is addicted to the alcoholic habit, the indulgence is likely to be intemperate and destructive. The craving for intoxication is like that of dipsomania—almost irresistible. The Celt drinks the strongest liquors, and in great quantities. His will is feeble in the presence of temptation, for his passions are violent and unruly; and this is especially true with respect to intoxicating liquors. In a manner parallel with the dipsomaniac (whose will is weak from disease), the will of the Celt is weak through the constitutional organization of the race. The Celt, when an inebriate, may abstain *altogether* by a strenuous effort; but commonly, he cannot "drink in moderation."

It is a widely spread notion that, if the dipsomaniac would partake of small quantities of alcoholic liquor daily, his craving would be satisfied, and he would thus avoid his periodical spasms of intemperance. The fact is, that alcohol directly *weakens* his power of resistance by overcoming the inhibitory functions of the nervous system, and hypnotizing the moral nature. It therefore happens that the will, already feeble from disease with respect to the alcoholic temptation, is, in him, completely overcome, destroyed, when his brain is even partially affected by the alcoholic poison. The dipsomaniac may possibly, under the pressure of uncommon and superlative motives, abstain for a short time altogether; but he can never drink in moderation. The moderate drinker has moral inhibition to contend with; the total abstainer has not. Ordinarily, a single dram completely annihilates what little will or self control the dipsomaniac may have by nature, and a spell of drunkenness goes right on, till the physical organism is poisoned and exhausted. Indeed, the interference of the superlative motive, with the course of the dipsomaniac, is more of the nature of a brief substitution of some antagonistic *emotion*, stronger than the alcoholic crave, than it is an assertion of true will power. The intervening emotion may arise from grief, or overwhelming disaster. But, in

the nature of things, it must be temporary; and when it passes away, the neurotic tendency is resumed.

It may, likewise, be possible for the Celtic inebriate to abstain totally from alcoholic indulgence; but it is usually impossible to partially abstain. To him, temperance in the sense of limited drinking is quite out of the question.

These facts and considerations warrant the inference that the constitution of the Celtic race contains in its elements peculiarities that are not common to human nature in general, and that do materially modify the character of inebriety. Liquor-drinking among the Celts is impulsive and extravagant, and drunkenness is likely to exhibit its worst and most furious aspects. In this race, especially, may be engendered homicidal inebriety, maniacal inebriety, *trance inebriety*, to say nothing of the unbidden impulses to all manner of inebriate vice and crime; and all this, not from the stress of actual *disease*, either personal or through heredity, but from the natural and necessary influence which the peculiar constitution of the race exerts upon the phenomena of alcoholic drunkenness.

5. There is considerable difference, not to say contrast, between the constitutional peculiarities of the *German* and the Celtic races; and the modifications impressed upon the phenomena of inebriety by the distinctive traits of the German character are as singular and interesting as are those associated with the Celtic constitution.

Phlegmatic is the usual term employed to designate the German temperament. The German of to day is essentially the same as the German described by Tacitus. He is the unswerving and unchangeable *democrat* of history. He will possibly agree to surrender a part of his individuality into the keeping of society at large, in order to secure certain social and civil advantages — notably, protection and security; yet, should he be exposed to inconvenience on that account, he is ready to repudiate at once the compact. Touch him on what he deems to be his individual privileges—as, for instance, in the matter of temperance legislation — and he will deny the right of society to control him. He loudly inveighs against the curtailment of his "personal liberty," and he will claim for himself the utmost individual license, rather than willingly submit to what he regards as slavery.

The Celt apologizes when he gets drunk. He explains that he has trouble to contend with, or disappointment, or sickness, or death; and he professes that he drinks to soothe an insupportable anguish of spirit. But the German never deigns to give a reason for intemperance. He declares that he has a right to get drunk, and, indeed, that drinking, so far from being harmful, is positively beneficial, and he verifies his opinions on the subject by bringing beer into his family to be used by all its members. The German does not crave the strong and overmastering liquors that are so alluring to the Celtic nature. He seldom becomes helplessly intoxicated; but, unlike the Celt, he drinks with steadiness and regularity, and is not liable to be disabled with the deep prostration of inebriate excess.

Unquestionably, the beer of the modern German is the drink described by historians as the national beverage of the wandering tribes of that people in the days of Julius Cæsar. It is a drink containing considerable alcohol, yet so tempered with other ingredients that it sustains its inebriating influence steadily, and with little liability to sudden abatement. When the German arrives at the point of inebriation where the song and the muddy witticism break forth, he has little difficulty in maintaining his condition for a considerable length of time. Not so the Celt, who prefers the stronger drinks of whisky or brandy. His nervous exaltation is so glorious, so ecstatic, that he becomes intent on elevating his feelings and fancies, if possible, still higher, and the potations are redoubled, soon ending in mental disintegration, stupor and oblivion.

The desire for alcoholic indulgence in the German race is, therefore, influenced by the physical constitution of that race. The German calls for a peculiar and modified inebriety, and the ingenuity of his mind has discovered and prepared a material which exactly fulfills his wishes in the matter of inebriating drinks.

There is, perhaps, small encouragement in attempting to influence the German inebriate in the direction of abstinence. His inebriety belongs to his constitutional nature; it is *sui generis*. It is, in fact, a leading characteristic of his race, and has been recognized as such from the time of his first appearance in history. No amount of evidence seems to be competent to shake the faith of the German in the harmless properties and useful virtues of his national beverage. Beer is German, naturally and constitutionally, just as the instinct of personal liberty is German.

In an ancient period of time, the German people inhabited wild and inhospitable woods and morasses. Their houses were poor and open huts, set up without labor, and abandoned without regret. They were ever ready to shift their habitations and country for others that were more inviting. But, above all, for our present purpose, they drank habitually and copiously a kind of intoxicating liquor, "corrupted," as Tacitus has it, into a "semblance of wine." An important point is, these people have amended their houses, but not their drinking peculiarities.

The Scandinavians, a neighboring people, not only partook of this same alcoholic drink as long as they lived, but they believed that they would be "served with horns of mead and ale" after

death, in *Valkalla*, the hall of Odin — the paradise of heroes.

In Saxon England, the characteristic national revels were embalmed in song, for

> "'Tis merry in hall
> When beards wag all"—

a description totally inapplicable to the frantic and insane fury of Celtic intoxication.

The application of some of the principles advanced in this paper is of much wider extent than a superficial consideration of them would indicate. I will confine myself, however, to a single point.

Prof. Wiesmann, of Frieburg, has recently claimed that "characters *acquired* by the parent are not transmitted to the offspring."[1] There is nothing to show that the national habit of beer-drinking might not have been in entire accord with the barbarous customs and surroundings of the ancient German people. It is not impossible, indeed, but the habit may have been, under the circumstances, conservative and beneficial. But as the manners of the ruder times became softened, and good houses and pleasant homes arose on all sides, while the lights of civilization began also to glow and brighten, the ancient custom of drinking was not correspondingly affected. It was not abated, apparently, in the smallest degree. What was at first, probably, a habit merely *circumstantial*, became, by long continuance through ages, a habit *personal, central, constitutional;* and, when the ancient circumstances had disappeared, the hereditary mark, affixed to the constitution of the race, remained unmoved and unchanged. So deeply implanted is the proclivity for malt liquors in the German people, that it is questionable if a portion of the advantages and pleasures of civilization itself would not be surrendered, rather than the national and traditional habit of beer-drinking should be abandoned.

Illustrations of the influence of race on the characteristics of inebriety might be multiplied. The American race, the African race, and many distinctive tribes and families, furnish examples of the fact that the phenomena and responsibilities of drunkenness are modified by constitutional peculiarities. And this truth shows that in estimating the motive and guilt of imputed crime, the utmost circumspection, discrimination and industry should be brought to bear on the investigation. For it shows a weakness in the legal assumption that the criminal inebriate knows, before he drinks, what will be the effect of drunkenness upon the powers of his mind and will.

[1] Journal of Am. Med. Ass'n, 1890, Dec. 27, page 924.

TREATMENT OF THE OPIUM NEUROSIS.

Read before the Section of Medical Jurisprudence and Neurology, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.

BY STEPHEN LETT, M.D.,

MEDICAL SUPERINTENDENT OF THE HOMEWOOD RETREAT, GUELPH, ONT., CANADA.

It is not my intention to enter into elaborate statistics to prove the prevalence of the opium disease, or to discuss the causes which operate in its production; suffice it to say, that the habitual consumption of opium and its products does exist to a very alarming extent in this country, and that some of the causes which give rise to this malady are under our control; others are beyond our power. Nor do I purpose portraying the dire physical and mental manifestations resulting from the daily and prolonged use of the drug, interesting and instructive as the subject might prove to be, but rather do I wish to confine myself to a consideration of the treatment of this disease as it is presented to us, and indicate those methods which, in my hands, have proved most practicable, and, in my opinion, calculated to produce the best results.

In that plan of treatment which I am about to advocate, I cannot lay claim to originality, having closely followed the lines marked out by others in the plan of treatment known as "gradual reduction."

In attempting to treat the opium disease, it is all important the physician should eliminate from the mind the *vice* theory, and consider the case in the light of a *disease*, which presents certain pathological conditions requiring skill, patience and sympathy to successfully combat, fully as much as when he is treating other forms of disease.

What the special pathology of this disease is has not been clearly demonstrated; but that such a condition exists can hardly be questioned, and has been strongly insisted upon by eminent authority.

When we find a patient able to take repeated poisonous doses of such a drug as opium, with perfect impunity, and when it is demonstrated that such doses are essential to his bodily comfort, or even necessary to sustain life itself, certainly there is the justifiable inference that some change in the animal economy has taken place, that a departure from normal action is set up, and that a pathological condition is established. Dr. Clouston, in the July, 1890, number of the *Quarterly Journal of Inebriety*, clearly recognizes this diseased condition, while Dr. Charles L. Hughes, of St. Louis, in the *Alienist and Neurologist* for July, 1886, makes mention of it in the following language: "The long continued use of opium or of its salts engenders a disorder of the nervous system which is entitled to distinct recognition. Its sequence is as much a pathological entity as alcoholism, saturnism, hysteria or chorea."

"Meco-neuro-pathy," he says, "is as much entitled to recognition as that well-known disease, epilepsia."

This assertion he fortifies by many interesting and undisputable facts, and in this connection, draws particular attention to, and points a vividly realistic picture of, the dire results consequent upon the sudden deprivation of the accustomed drug in an opium habituate. Many other eminent men hold the same opinion, and I look forward to no distant date when we shall see these assertions verified by microscopic demonstration.

These pathological changes appear to be situated, chiefly, in the nervous system, more particularly in the great nerve centers, and thus false impressions are conveyed to all organs of the body, thereby interfering with the due performance of their several physiological functions, producing disturbance and discord where harmony and normal action should exist.

Without enquiring further into the pathology of chronic opium poisoning, and accepting as fact that disease does exist, it remains for me to give a résumé of the methods of treatment advocated and adopted.

In the first place, we must bear in mind that there is no drug known to the medical profession which will cure this disease. We have no *specific* for it. Substitutes there may be, but substitution is not curing the neurosis, and the risk of producing a worse disease thereby requires extreme caution as to the selection of such a remedy.

Three separate and distinct modes of treating the opium habit are advocated and practiced: 1. That of abrupt and total withdrawal of the drug; 2, its rapid reduction; 3, that of gradual reduction.

As regards the abrupt withdrawal of the drug, I cannot for a moment countenance such a barbarous, inhuman and dangerous procedure, involving, as it does, the most exquisite torture, which no being on earth can fully realize save the opium habituate deprived of his opium. The shock to the nervous system is so intense as to make a lasting impression, which is manifested in the higher brain functions, and the risk of fatal collapse is unjustifiable. Words fail me to adequately express the reprehension I would cast upon those who set out on this despotic course, or to convey to you an appreciable idea of the misery and suffering it entails upon a most pitiable and helpless creature. I am astonished beyond measure to find so eminent an authority as Dr. Clouston, of the Royal Edinburgh Asylum, advocating and carrying this treatment into practice. The deservedly recognized marked attainments he possesses, the careful and sound observations he has made and recorded in other neuropathic disorders, the valuable work on insanity he has published — a book which should adorn the library of every asylum physician — and the distinguished position he occupies among his confréres, gives weight as coming *ex cathedra* to anything emanating from his pen. I would not dare to thus criticise his treatment of the morphinomaniac were it not that I feel it a duty to humanity to protest against such cruelties being practiced upon a most unfortunate class of sufferers who are powerless to defend themselves. How a man endowed with the keen accurate perception and high educational attainments of Dr. Clouston, whose long and varied experience among the mentally afflicted must have developed in a marked degree that sympathy for suffering humanity which is so essential to the successful treatment of the insane, could ever advocate, much less carry into practice, such "heroic" treatment, is to me, at least, a problem incapable of solution.

In his article published in the *Quarterly Journal of Inebriety*, vol. xii, No. iv, page 311, he clearly recognizes the diseased condition we are now considering, and truly describes in terse language the subject thereof in the following words: "A morphinomaniac, in the advanced stage of his complaint, is a most miserable object in mind and body. He is manifestly diseased in all his nerves and most of his other functions. There is just one other being on earth who is more miserable-looking and more miserable, and that is the morphinomaniac who is being cured by enforced abstinence. The one is alive; the other is more than half dead. As we shall see, the fight is not altogether for the cure of the deadly habit, but in the first instance, to enable the patient to live through the cure."

Such are Dr. Clouston's accurate observations; nevertheless, in the very next paragraph he gives us a sample of his mode of curing this disease by *enforced abstinence*, which he justly admits causes a fight to keep the patient alive. Look at the pitiable subject he practices this on. A man, in the first instance, weighted down with a "distinct nervous diathesis," who at an early age suffered under a severe illness, which left him weak and sleepless. He "crams" beyond his strength to pass examination at college; buoys himself up on opium; he becomes the subject of rheumatic arthritis at the end of twenty-five years of morphia disease; under compulsion, he places himself as a voluntary patient in an asylum. He now presents the appearance of a "broken-down looking man," a physical and mental wreck. He was treated with beef-tea and brandy. We are told "the beef-tea caused diarrhœa, and had to be stopped. He could retain milk, liquid custards and brandy better than anything else. The heart's action got very weak, and digitalis seemed to strengthen it. *No morphia was given.* For a week he was horribly depressed and debil-

itated, and his life was certainly in danger." Under chloral and bromides, "he slept restlessly and awoke with a feeling of horrors." Contrary to what I would have expected, he weathered the storm and reached anchorage, but what a wreck, to use Dr. Clouston's own words! "His brain is irretrievably damaged in all its higher functions by his twenty-five years' continuous intoxication by opium."

How sublimely does the doctor take shelter behind this twenty-five years of so-called "intoxication by opium," and ascribe to this cause all the permanent damage done to the "higher brain functions." Granted that the opium was an important factor in the production of this dire result, did not the fearful ordeal the unfortunate victim went through tend to still further disorganize and produce a marked untoward impression upon an already mentally depressed and physically diseased condition; could the same man, crippled as he was with an originally unstable nervous organization, even though he had never tasted an opiate, have gone through a similar ordeal and retained a "mens sana in cupore sano;" would not a milder form of treatment have at least prevented so terrible a shock and given nature a far better chance to repair the inroads made upon the patient's health by the long continued morphia habit? What was there in the result that in the smallest measure compensated for the terrible suffering sustained in effecting a so-called cure. What advantage accrued either to the patient, society or science, by this barbarous treatment? Would it not have been better to have permitted the poor creature to continue his morphia, and in his own way enjoyed what few years were left to him to live, and when death was inevitable have quietly, gently and tenderly lowered him to his grave with as little pain as possible?

Two other cases are recorded by Dr. Clouston in the same article; the same line of treatment was adopted, the same ordeal passed through, similar results obtained. If this is success, if this is a cure, "I will none of it." I have said enough about the abrupt withdrawal plan of treatment. Let us draw a curtain over this horrible picture, hide it from view, and pass from so revolting a topic to the second plan of treatment, that of

RAPID REDUCTION.

I regret being unable to speak from experience as to the merits or demerits of the rapid withdrawal plan of treating the opium habituate. Such has not been my practice, therefore what I may say regarding it is gleaned from the literature pertaining thereto, more especially the publications of my friend Dr. Mattison, of Brooklyn, and those of Professor Ball, of the Paris Faculty of Medicine. Both these gentlemen, as well as many others, appear to have met with marked success and satisfactory results. Certainly this method of treatment seems to carry with it many advantages. The time occupied in removing the drug from the circulation is comparatively short, from eight days or less to two or three weeks. yet it is withdrawn by such gradations that the shock to the nervous system is not so great or the danger of collapse so imminent as when the patient is at once deprived of all opiates; at the same time other remedies are employed which appear to have the desirable effect of quieting the nervous system and sustaining the patient whilst the final withdrawal is being accomplished, thereby safely carrying him through a crisis otherwise critical; when this object is attained the special remedies employed are apparently discontinued without inconvenience. Amongst such agents so employed may be enumerated, general and special stimulants, cardiac tonics and nerve sedatives, such as ether, alcohol, nitro-glycerine, sulphate of spartein, the various preparations of valerian, jamaica, dogwood, cannabis indica, belladonna, hyoscine, electricity, hydrocyanic acid, phosphoric acid, paraldehyde, chloral and the bromides, especially the bromides of soda in large doses mounting up to ℥i per day. This latter has been especially brought to the notice of the profession by Dr. Mattison, in whose hands it appears to have proved a valuable remedy, fulfilling a most important office and safely meeting all required indications. As accessories, hot mustard, salt or electric baths, sustaining nourishment, careful nursing, and the best of hygienic surroundings.

As already stated, I have not followed out the treatment by rapid reduction, chiefly because I have found the more gradual method, though involving more time, eminently satisfactory and have thereby safely and successfully cured many patients whose enfeebled condition appeared to me to prohibit the more rapid method. I must also confess being somewhat skeptical as to the ease and freedom from pain with which an opium habituate can be cured by rapid reduction, and before abandoning that mode which I have found satisfactory, I would like more information than I possess as to pain, discomfiture, restlessness and general relaxation of the mucous membranes. Whether in the rapid reduction plan such phenomena are severe or merely trivial in character. Again, it appears to me that the time required to restore the general health and overcome the inroads made upon it by years of opium addiction, is quite equal to the extra time involved by the gradual reduction method. Many writers state that fully six months should be occupied in such restoration, but I know in practice, the rule is a much shorter period spent under special medical supervision.

GRADUAL REDUCTION.

It now remains for me to consider the third mode of treatment, viz.: that of gradual reduction, which has been so ably described and advocated by Dr. Hughes, of St. Louis, and practiced by myself and many others. It is claimed to be rational, humane and a safe line of treatment, reassuring to the patient, and what is all-important, presents to their minds a feasible and comparatively easy mode of casting off these shackles which have so unrelentingly bound them for so many years, constituting them veritable slaves to an overpowering drug which is gradually but surely pressing them onward to meet a miserable and appalling death, which comes at last as a relief to a more pitiful and painful existence.

This treatment essentially consists in a slow, even and methodical withdrawal of the drug, without substitution; at the same time using all the means known to medical science to restore, as far as possible, the shattered nervous system, which is the universal condition of all these cases. The gradual withdrawal of the opiate is effected by decreasing the amount in fractions of a grain at each dose, and the following is a general outline of my mode of procedure.

Having by a categorical enquiry ascertained as nearly as possible, the amount of opiate the patient is in the habit of taking during twenty-four hours, I calculate its equivalent of morphia, then dividing this amount by the number of times it is necessary for him to resort to it during the day, a fair approximate of a simple dose is arrived at. This dose is carefully weighed, administered, and its effects noted; especially as to the following points: Does it sufficiently sustain the patient and keep him comfortable? How long does its effect last? When would a repetition of it be necessary to prevent depression, and would a smaller dose suffice. In a few days by careful observations of this nature, accuracy is obtained, a basis of treatment instituted, and reduction commenced. The rate at which reduction progresses must be governed entirely by the nature of the case in hand. Some patients will bear to be reduced faster than others; much depends upon the physical condition and the quantity of opiate consumed, those taking large quantities can, at the commencement, be reduced faster than where a less amount is the starting point. The guiding rule is, to remember there is a point at which the patient remains comfortable for a certain number of hours. That point can be noted between the extremes of stimulation by excessive opiate and depression consequent upon too small a dose. Upon the accuracy of adjustment of the dose to this point, depends the ease or the discomfiture of the patient, and success in treatment. The rate of reduction also varies with the progress of the case. As a rule, when treatment is commenced with a patient taking, say 20 grains of morphia a day, reduction can be effected at the rate of about one grain every three days. As the quantity taken in twenty-four hours gets less, so also must reduction be more gradual, so that it will require four, five, six or even ten days to withdraw a single grain. When a point is reached at which only one grain is consumed in twenty-four hours the greatest skill, care, and caution is necessary, and to remove this single grain I usually employ from three to four weeks, gradually paring a fraction of a grain from each dose, and when you remember that that last grain is divided into perhaps three or four doses in the day, the final dose being brought down to so fine a point as $\frac{6}{1000}$ of a grain, you can appreciate the delicate and gentle manner in which it is withdrawn. No appreciable difference in the dose is noticed by the patient, no shock is produced on the nervous system, the dreaded upsetting of the stomach is avoided; there is little or no relaxation of the mucous membranes, diarrhœa is almost absent, or if present is so mild that the patient will not complain of it. There is no restiveness or inability to continue at a fixed occupation; sleep is usually good, natural and refreshing, and the patient finally slips from under the yoke of the demon opium without being able to note when he took the last dose. Emerging from his years of tyrannical bondage with a new lease of life, buoyant in spirits, physically improved and mentally bright.

Such a course of treatment necessarily involves constant and ever watchful care on the part of the medical attendant, and such physicians who are not prepared to devote time and patience to it had better not set out in the task. To those who follow it out faithfully, the result will amply reward them for all the trouble involved. Each dose should be put up by the physician himself. Accuracy in measurement is essential, none the less so, is punctuality in the time of administration; this cannot be accomplished without some fixed method to work upon. With such method the task is not so insuperable as might at first appear, though I doubt if the general practitioner could carry it out; the uncertainty of his movements would seriously conflict. In order to insure accuracy of dose and steady reduction the method adopted is as follows: When regular treatment is commenced two mixtures are compounded and the bottles labelled respectively 1 and 2. No. 1 is a mixture containing some of the vegetable tonics, with glycerine and water sufficient to form a ℥200 mixture; to this is added one-half the amount of morphia per ℥i you wish to give at a dose. No. 2 is precisely the same as No. 1 minus the morphia; ℥ii are now taken from No. 1 and admin-

istered to the patient, the same amount is taken from No. 2 and poured into No. 1. The latter will now contain a fraction less morphia per ℥i than the original mixture, that fraction multiplied by 2 represents the amount of reduction at the next dose. A record of each dose should be accurately kept; it is most important to be able to tell at any moment what the morphia strength of the solution is, as there are times when it is necessary to discontinue the reduction for a few days, or other periods when it is prudent to increase the rate of reduction by removing a certain amount of the mixture from the bottle, or an accident may arise whereby the bottle gets broken or some of the mixture spilt, etc.; under such contingencies, unless the strength of the mixture is absolutely known, it cannot be replenished without interfering with the even tenor of treatment. It is also desirable to know the rate at which reduction is proceeding, and when nearing the end, to be in a position to say that such a dose will be the final one, and be certain a crisis will not follow its withdrawal.

Such a record as I have indicated is easily kept in a case book with suitable rulings for the following headings: Date, time for dose, bulk of mixture, amount of morphia to ℥i, quantity of morphia at each dose, daily amount of morphia, daily reduction, quantity of morphia left in mixture. It is but a minute's simple calculation to place the correct figures in the appropriate columns, and a glance at any time gives you accurate information. The calculations are best worked out in decimals and should be carried to the third decimal place.

Thus I have given you a general detail of the method I adopt, to evenly and methodically reduce the morphia. Certain modifications are necessary to meet special exigencies. Should reduction be going on too rapidly and signs of depression set up, the patient is easily righted by halting for a few days and holding him at the point reached. It is sometimes astonishing to see how rapidly the system will respond to this rest; in a short time the patient will be bright and buoyant, when, the mixture being replenished, reduction may again be safely resumed, though perhaps at a slackened pace. In some cases many such rests are required. In others reduction may proceed steadily from commencement to finish without inconvenience.

Concurrent with this reducing process our skill must be directed to restoring the physical health and bringing it as nearly as may be to a natural standard. Sustaining nourishment, if necessary repeated at short intervals, frequently a light meal at bed time, is of great advantage. But usually the appetite soon improves and regular meals are enjoyed. Pleasant recreations of a light nature short of fatigue, and out of door exercise should be encouraged. Tonics, chiefly iron and quinine in tonic doses; the syrups of the hypophosphites is an admirable form. Some cases, however, do not bear the strychnine well; when it is tolerated it proves useful. In emaciated cases cod-liver oil emulsion will be found of service.

If from causes you cannot control, time is an important consideration and you are obliged to push the reduction more rapidly than sound judgment would dictate, restlessness and loss of sleep coming on, gr. ½ doses cannabis indica ext., will prove a valuable aid. Hot salt baths with friction to the skin is of much value; ℥ss. doses fluid ext. humuli often produces refreshing sleep, or occasional doses of chloral, paraldehyde or antipyrine at bed time, will be followed by good results. Electricity and stimulating liniments will allay the pains sure to arise if too rapid reduction is practiced. Salsiminum will relieve old neuralgias now likely to give trouble.

All opium patients are more or less troubled with constipation, oftentimes very obstinate. Keep the bowels regulated but do not make a "Valaklava charge" on the alimentary canal by giving drastic purgatives; paralyzed nerves resent such treatment. "Milder measures best prevail." A copious enema will relieve the lower bowel, and lubricate the passage for the discharge of hardened accumulations. A mild mercurial is often of much service. When it is desirable simply to clear the intestinal tract my sheet anchor is fl. ext. cascara sagrada and glycerine in equal parts.

Alcohol in any form I disapprove of, it invariably causes a demand for more morphia. Bromide of potash in sufficient doses to be of any use causes too much after-depression. Cocaine in the treatment of the opium habit I have tried and discarded as dangerous in the extreme.

In cases of double addiction of morphia and alcohol, or morphia and cocaine, I invariably at once withdraw the alcohol or cocaine and continue the morphia, giving sufficiently large doses to keep the patient comfortable. I can fight and conquer one devil but not two.

Whatever form of opiate is used, I follow Dr. Hubbard's recommendation to discard it at once and give its equivalent of morphia. So also with the use of the hypodermic syringe; I abandon that and administer morphia by the mouth. Patients are apt to object to this at first, but they soon realize the many advantages gained by the change. The same dose administered by the mouth will sustain the patient fully as well as when given hypodermically; it is however, less prompt in its action, but more lasting.

With very much broken down and highly nervous patients, I permit them to retain their syringe and morphia until they become accustomed to their surroundings and the new order of affairs; it is a source of much comfort to them, dispels

their fears and in my experience will not be used unless necessity requires it. In a few days, when confidence is established, the syringe together with all morphia, will be voluntarily handed to me, and the patient will place himself entirely and unreservedly under my care, willing to assist in the treatment of his case to the utmost of his ability.

Lastly, I would enjoin you to pour out your full sympathy towards the unfortunate opium habituate who has had a hard battle to sum up enough courage to present himself to you for treatment. He needs help. He needs care. He needs kindness. He has suffered long years of torture and deprivation; been tossed hither and thither, like a rudderless vessel, upon the turbulent waves of a cold and austere world; looked upon as a vicious outcast whose every action is treated with suspicion, his statements doubted, his case mismanaged. Give credence to what he tells you. Extend a rescuing hand to the drowning man. Pour oil and wine on his smarting wounds, let your full sympathy and aid go out towards him; you will then brighten a dark spot in the deepest of despair, and have the heartfelt thankfulness of an ever grateful fellow being.

DOES SCIENCE JUSTIFY THE USE OF ALCOHOL IN THERAPEUTICS? IF SO, WHERE? WHEN?

Read before the Section of Medical Jurisprudence and Neurology, at the Forty-second Annual Meeting of the American Medical Association, Washington, D. C., May 6, 1891.

BY ELISHA CHENERY, M.D.,
OF BOSTON, MASS.

The time is upon the profession to review and recast its notions concerning the use of the alcoholic compounds in the treatment of disease, grounded upon what they are, what they do, and what they do not do; for Argus-eyed science of our day shows alcohol to be widely different from what was supposed of it, in the years that are past. If our fathers drove their cows around a stump to make them give down the milk, we are not bound to do the same. Moreover, the liquor treatment has come to have a moral bearing, which both the human and the divine of our profession requires that we respect. And let me here add what the learned President of this Section has said: "The influence and teaching of the medical profession on the great drink question, is most imperatively demanded." Yet I radically differ from him in another statement: "Medically and scientifically, the whole subject is the polar region of mystery."

Certainly this speaks poorly of the candor of those who still prescribe it. If so, then why not leave it alone?

Bunyan got his hero into the Slough of Despond; but does any one in his senses believe that the Slough of Despond is a necessary part of the pilgrim's pathway?

My subject compares to my time, to-day, like a man's hat to a boy's head. Hence I can touch only a few points, and that in the most unsatisfactory way—of leaving out most of the proofs of my positions.

ALCOHOL AS A RESTORATIVE.

This term includes the tonics—agents which increase strength and overcome languor—the promoters of the constructive metamorphoses, and the force producers. It excludes that which adds nothing, only whips out the strength the body already has. Restoratives are in great demand. The physician to-day prescribes them more frequently than any, if not all, others. He feels, when doing so, he is adding to the sum total of vitality.

Considering alcohol in this relation, we meet the fact that its chemistry is squarely against it. Not a particle is incorporated into the bodily tissues; so, to say the least, he is visionary in the extreme who prescribes it with the idea that it is incorporated, or that it incorporates anything else.

It contains carbon, as all carbo-hydrate food substances do; but that carbon cannot be extracted from it as from them. They all undergo certain changes, as chemistry shows; while it enters, pervades, and escapes from the body as alcohol, no proof of its transformation, either in the digestive tract, the blood or the tissues, ever having been found. This one fact of its indigestibility nullifies all arguments in its behalf as a force producer. If any contend that it does change, let them give the evidence.

The various symptoms, commonly attributed to this supposed change, are very satisfactorily accounted for from its known irritating and anæsthetic actions. Yet if we admitted all that has been claimed for it in this respect, we concede very little, for Voit and Subbotin say: "In the amount we can take without injury, its importance as a nutriment is too small to be considered." But we have no warrant for the concession.

That all the liquor taken cannot be recovered, we allow. It is the same when alcohol is mingled directly with freshly drawn blood: But the mere loss of a portion is not a proof that that portion changes and becomes useful. Such conclusion is not scientific nor rational. The loss of my knife is not proof that Jones has it, or that he stole it. As well contend that Stanley's "rear column" found Emin Bey. Better do as Hahnemann did—jump from the tangible of medicines into their spirituality. Right reason requires that we withhold our conclusions till we establish the premises. In the light of the foregoing, how unreasonable were the assumptions

of Dr Todd: "Alcohol is the most easily digestible and assimilable of substances. . . . It oxidizes in place of the tissues." Equally absurd is the theory that alcohol conserves tissue, as we showed in our essay last year.[1]

That it is sustaining because some persons have lived a long time while taking it, is not conclusive. There is every reason to believe they would have done better without it. Had Dr. Tanner and the others who fasted longer than he, depended on alcohol rather than on the store of nourishment in their bodies with water to dissolve it, it is unquestionable that the undertaker would have had them long ere the forty or forty-five days expired. But, so far from acting as a restorative, abundant, careful observation shows that liquor actually depreciates the strength one has. It is the strong, not the weak, who bear it —not the young, the feeble, and those addicted to it. In other words, the strong can *resist* it, while the weak cannot.

Thus speaks Dr. Chambers: "Above all, I would caution against employing wine as a substitute for the true restorative treatment." "To call alcohol food," writes the Editor of the *British Medical Journal*, "in the present state of our knowledge, is an abuse of language." "The popular belief," says Dr. A Mullan, "that beer and other alcoholic drinks are strengthening, is a mistake, a delusion, a mere superstition, which receives no support from science."

ALCOHOL AS A STIMULANT.

This class adds little or nothing to the bodily forces. They call out what was in store, using it up before its time. They act promptly, and for the time only. Their repetition is a matter of much discretion. They take from the sum total of vitality, and lead to exhaustion unless wisely guarded. Alcohol has so monopolized this term, that alcoholics and stimulants are at present quite synonymous. But is not the term mostly misapplied when applied to alcohol? When and where does it summon out the forces of the body the better to resist opposing forces? Never, except in very small doses, much smaller than we should be likely to give, if we give it with the idea that it is stimulating.

If we, for a moment, lay aside our pack of vague notions, and sit down at the deliverance of instruments of precision, we shall learn for certainty that any considerable doses do not stimulate, but depress and weaken. "Careful observations," Brinton states, "leave little doubt that a moderate dose of beer or wine will, in most cases, diminish the maximum weight a person can lift." So Liebig: "The circulation will appear accelerated at the expense of the force available for voluntary motion, but without the production of a greater amount of mechanical force. It is attended with an inward loss of power." Prof. Marvaud of France, Zimmerberg of Germany, Richardson of England, and Martin of Baltimore, have wrought at this and find alike. According to Prof. Martin, as much as an ounce of whisky or brandy always lessens the force of the heart, though generally increasing its frequency. Prof. W. E. Ground, of Toledo, asserts "that it acts as a paralyzer from the first, through paralytic effect on the nerve centres, as in experiments where the inhibitory nerve is cut." Alcohol adds no heat. It strengthens neither body or mind; and this is not only science, but the common sense view of common experience. Alcohol agitates the system, while nutritive agents perform their work silently within, leaving other functions undisturbed. Moreover, it has certain drawbacks which stand in the way of its repetition, which proper stimulants do not have. Cold, or mechanical irritation to the stomach, increases heart frequency, and heart and vascular force. For the instant, small doses of spirits will do this, but, directly after, the absorbed portion begins to paralyze the nerves and capillaries. Hence heat, hot drinks, the aromatics, etc., are the proper means to warm a chilled person. They do not tumble the blood into the external capillaries as alcohol does, to the neglect of the more important internal parts. Whales are made to resist cold and not heat. Their exterior is in contact with the waters of the polar seas, while under their skins is a thick layer of non-conducting blubber, beneath which their warm blood circulates. Our bodies are made to resist both heat and cold. Exposed to the latter, perspiration stops, the skin contracts, forcing most of the blood beneath the subcutaneous layer of fat, where its heat is protected. A drink of grog unlocks the skin and drives the blood to the surface, dissipating its heat, just as would happen to the whale if his blood were brought to the outside of his blubber, when it would lose temperature and his heart chill. Not only is alcohol bad in this way, but it does more; it puts a wet blanket over the internal fires, by shrinking and depressing the functions of the blood cells. So, so far from its being a stimulant to bring out the forces of the system to resist cold, it is a traitor, and appears doubly armed on the side of the enemy. Arnold had his good qualities; so has this. If a person has been exposed to severe cold, and is suffering internal pains and cramps from the vascular engorgement, no doubt alcohol has temporary helpful relations to the case, bringing the blood away to the surface. So has it useful relations to syncope, to shock, and to other cases of deficient brain circulation, where its irritation to the stomach, and not its absorption, may serve. Hence,

[1] "Does Alcohol Conserve Tissue?" in pamphlet. Free to physicians who send to the author for it. See this much more fully shown in the author's "Alcohol Inside Out," 12mo, 350 pages, mailed for $1.

what is used for the purpose should be strong. There are many other things as good, if not better. Thus the horizontal position, splashing the face and neck with cold water, cold or hot drinks, aromatic teas, camphor, ammonia, are appropriate, and are the people's remedies; while physicians may add amyl-nitrate, nitro-glycerine, and other things too numerous to mention. For years, nitro-glycerine has been the chief remedy of the writer. It is good to administer in anticipation of faintness from operations. So iron, and not alcohol, for anæmia and anæmic neuralgia; bismuth for gastralgia and pyrosis; not whisky, but the bromides, capsicum, digitalis, feeding, nutritious enemata, for delirium tremens; heat to the chest, camphor, ammonia, strophanthus, digitalis for the flagging heart; not alcohol, but digitalis, strychnia for dropsy; camphor, chloroform, turpentine, not liquor, for malarial chills; not liquor, but turpentine, ergot, salt, milk, for hæmorrhages; not alcohol in congestive dysmenorrhœa, inflammatory colic, dysentery, and a thousand other conditions in which stimulation is required. [In all cases of nervous exhaustion, or where the stomach is at fault, Dr. Archibald Billings says "restoration will not be expedited by stimulants," meaning alcoholics. Being, then, rather a hindrance than a help, good sense is on the side of the surgeons of certain corporations where accidents are common, in recommending that the employés be prohibited from resorting to liquor in cases of injury.]

ALCOHOL AS AN ANÆSTHETIC.

It would be well if this term, as applied to alcohol, were excluded from medicine. That alcohol by the skin, stomach, lungs, obtunds the nerves, paralyzes the muscles, stupefies the brain, needs no confirmation here. As persons see these effects, they name it according to their conceptions—intoxicant, narcotic, paralyzant, etc. I use the word anæsthetic, for, like Aaron's rod, it swallows up all the rest.

Anæsthesia is the most conspicuous of its effects. It is this which balms the feelings and brings the cheer; that smothers the aches and the pains; that exhilarates the mind, beguiles to repetition, to increasing doses, to habit, to inebriety, upsetting the mind, and raising the devil.

Alcohol is thus the very mad dog of materia medica. Nevertheless, it was the best anæsthetic known to our fathers. They also wore wooden shoes, things we need not wear. Ether, gas, chloroform, and many other agents have come to the fore, pushing it to the rear. They are not so deceptive, so seductive, so habit-producing, and those who handle them are not so likely to catch the Tartar—inebriety.

Having so numerous and efficient agents as substitutes, agents which have not its peculiar back-cut upon the blood cells, I need not waste time in pointing out when and where it can be used in this direction; for it was the new cane the old man used while all the former ones were put in a brace in the wood shed. Neither need I stop to indicate the purposes its varied properties fit it to serve as an external remedy. I therefore pass at once to my last point.

ALCOHOL AS A PERTURBATOR OF THE ORGANISM.

The effects of alcohol on structure, and so, on functions, marks it as the most remarkable disturber of the animal body with which we are acquainted. Whatever else it may do, here it takes preëminence. Its etherial influence, to be sure, are the lulling wings of the vampire; in this is its mouth applied to the vital fluids. Its anæsthesia is the dummy hand of the thief; here are the concealed fingers which filch the purse. The mental exhilaration it produces is the smiling face of Brutus; this, his bloody hand which plunges the poniard.

With all that is known of the morbid changes produced by alcohol, how little is systematically considered and applied in practice? Last year I called attention to its power over the blood corpuscles, and showed a photograph of the extreme changes it produces in their physical character, in a portion of blood taken directly from a drunken man. This was right to the point. It gave ground for explanations and deductions otherwise impossible. Knowing the physiology of these corpuscles, as the gas carriers of the body, we do not require to be beaten with a club to comprehend that such alteration in their character must amazingly effect their important functions. But this is not all. The alcohol which gets into the interior of the corpuscles, acts the part of the dog in the crib and refuses the oxygen and the carbonic acid. Thus in a double sense their functions are depressed. In the paper referred to, I explained how it was that alcohol so affected their physical character, by showing that the spirit, having a great attraction for water and little or none for the substance of animal membrane as such, by the laws governing osmotic action, compels the water to come out of the cells and mingle with it on the outside. Not only does it thus collapse the cells, but it also similarly affects all other moist structure throughout the body. Who has not seen this in mucus, in albumen, in the protoplasm of rapidly healing wounds?

What it does under the eyes on the outside of the body, it does on the inside, and the more so in proportion, as they are watery and the cell walls delicate. In this way are the tendons, the muscles, the nerves, the connective tissue and the organs affected. Is there, therefore, difficulty in comprehending why the bodies of drinking young men grow old apace? An agent that will steril-

ize the cells of a pup and prevent their evolution, thus holding his body throughout in the condition of a Chinese woman's foot, must and does pervert the structures of those who drink it. Here, then, we have the key to the alcoholic pathology—the changes so conspicuous in the bodies of old topers, and so surprisingly numerous in the bodies of moderate drinkers suddenly cut off by other causes. This shows why we cannot cure persons made sick by alcohol while the habit is continued; why surgical cases act badly in alcoholized patients; why the healing of wounds is not expedited but hindered when liquor is given; why the white blood-cells are crippled and protoplasmic movements arrested by this agent.

Here is the key that unlocks the mystery of fatty degeneration, fatty bloating. Is it strange that such organs as the kidneys, the liver, the stomach, the brain and spinal cord, the vascular system, should undergo fibroid and cirrhotic changes by so active an agent and acting in the way that alcohol does?

Here is the explanation why the bodily temperature can never be raised by alcohol, but always lowered; and why this antipyritic action cannot be rendered serviceable in practice. Here is its philosophy in weakening brawn and brain. Every other function must be depressed when the blood-cells are strangled.

Now, I ask, what reason have we to expect good from it in the treatment of any or all diseases of the respiratory system? They obstruct oxigenation and the elimination of carbonic acid. Does not alcohol do the same? They weaken; this, more. If pneumonia blocks pulmonary circulation and æration, and by heaping excessive labor on the heart, tends to overwork it and exhaust it, determining heart failure; this, more. Strange that we should lose our heads as philosophers in the face of alcohol. Would that we return to the lancet for this grave disease, relieving the volume of blood upon which the embarrassed heart has to act, and be done with this most irrational and fatal treatment of it, ever employed. If the structural changes in the lungs of consumptives hinders oxidation and weakens the body, does not liquor do the same, albeit it diminishes the cough by times? Is our philosophy correct when we give alcohol in disintegration with defective depuration, as in fevers and the like? Does it not itself increase depuration by hindering the absorption of oxygen and the expulsion of the waste, represented by carbonic acid and urea?

Certainly if it can obstruct the waste in a well man till he stinks from head to foot, it can never purify the blood of one already foul. These questions, with scores more that might be asked, being based on solid grounds, leave me little room to answer, Where? When? Give alcohol? There is nothing in physiology more certainly scientifically demonstrable than that alcohol changes the structure of the blood-cells, and, through these, the functions dependent upon them, and as their functions are vital and no hindrances to them can conduce to the restoration of the sick, the reasons for alcoholic medication are driven to the polar region of barrenness. They cut the tap-root of the popular liquor therapeutics, and no human invention can make it again bear green leaves. Alcohol, when in any degree of concentration, is opposed to ptyaline, to pepsine, to pancreatine. It is contra-indicated in bilious cases, cirrhosis of the liver, gout, Bright's disease and diabetis; the last of which it can directly produce.

But this paper is not written in ignorance of the fact that many good physicians use it. Were it not that many do, the statements herein would not be worth the making. I may be wrong; we all err. In a neighboring city an astute physician stood up in a medical meeting and deposed in favor of a certain pill, relating numerous cases where he had given it with good results. Another physician followed, showing the same pills which had been gathered from the former's patients, they passing whole, only losing their sugar coats. A prominent member of this Association had a fever case which got into the typhoid state; his kidneys being obstructed, I counselled efforts to open up the kidneys and skin and so relieve the nervous condition. The doctor was obstinate, believing in "bridging the chasm" with "the bridge that brandy makes," and gave it. His bridge was rotten. I now have a patient under my care who told me he had taken quite half a barrel of different liquors on the prescriptions of this same physician, and began to improve the moment he left the liquors off. A clergyman called on me, relating that his child had been sick with the typhoid and got to that condition where the doctor said nothing but brandy would save him, and accordingly brought a bottle of it to the house. The clergyman took it, threw it into the back yard, made a liberal portion of beef tea and gave it. Soon the sweat started, and the child fell into a sweet sleep and was better the next morning. The doctor spoke of the change and attributed it to the wonderful power of the spirit. I warmed that clergyman for not undeceiving his doctor, and allowing him to go away, strengthened by the success of the brandy in this case, to give it with increased confidence.

It may have been good in cases of fever, diphtheria, etc., where large doses have been given and which appeared to be beneficial. If so, I am very positive that it was owing to its power over the peculiar microbes in these diseases, sterilizing and rendering them inert; for we know that alcohol, at fifteen or twenty per cent. strength, overcomes and practically destroys most of the germs about us, even the blood-cells

themselves, as I have witnessed, producing death. And it is a most wonderful provision of nature against fatality from the drink habit, that the medulla oblongata is so much more resisting to the power of alcohol than the rest of the body, continuing its functions when all else is practically dead, keeping the heart beating and the lungs moving, fanning out the poison from the prostrated blood-cells. Were it not so, how often would the undertaker's service be required to what it now is!

I know I cannot answer all your questions, yet I trust I have said enough to show you that this subject is not all a mystery, but full of interest and instruction, if we but come out of the clouds and study it from ground principles. I came up the historic Potomac, and, though the oar, the sail, the smoking steamer, seemed to indicate that the current was devious, I am sure its steady flow is to the ocean beyond. Though I note some drift-wood held in sluggish side currents, some cross currents, whirlpools and waves, I am as satisfied that the stream of alcohol, whether taken foolishly, from habit, or on the advice of physicians, in large or in small doses, has but one general course, one end—the fathomless deep.

Comparing the results of my practice with the practice of those who use it, until something more scientific in its favor comes up, some new revelation is made, the day is far distant when I shall send another Brutus after my Cæsars.

INSANITY AS RELATED TO CIVILIZATION.

Read before the Section of Medical Jurisprudence, Washington Meeting Amercan Medical Association, May, 1891.

BY ORPHEUS EVERTS, M.D.,

SUPERINTENDENT OF THE CINCINNATI SANITARIUM, ETC., COLLEGE HILL, OHIO.

Insanity may not be, as is so commonly and confidently asserted, "a disease of civilization" —but conditions essential to the phenomenal manifestations of insanity obtain so rarely among savages and lower animals, and so frequently among civilized people, that, in the absence of contradictory testimony, the assumption that it is so, would seem to be justified. The question then becomes pertinent and interesting: What constitutional modifications are effected by, or with, the process of civilization, whereby human beings are rendered more liable to become insane? Who shall answer?

By common consent the medical profession is looked to for intelligent answers to all questions pertaining to insanity, and the insane. Is the profession qualified to so answer?

Qualified or not, there are members of the profession ever ready to respond; the least qualified, often, being the readiest. Capability to talk volubly, or write voluminously, about insanity —or any other subject, for that matter—with an affectation of learning, is a "gift" not unknown to the profession, however reputable it may be, as a body, for its thoughtfulness and reticence. Such 'gifted' members are, as a rule, however, not the most trustworthy, as expounders of principles, or historians of facts.

By interrogating less pretentious, but ordinarily intelligent members of the profession, respecting the relation of insanity to civilization, it will be found that various opinions are entertained by them on the subject; each having some value when properly estimated; but based upon foundations of facts too narrow and incongruous to stand the test of rational criticism.

Nor should it be anticipated of such men, whose preliminary studies, and subsequent habits of thought and observation have been in the way of specializations, rather than generalizations, should grasp the question as propounded, comprehensively; or respond to it otherwise than by some more or less dogmatic assertion of personal opinion; citing this, that or the other disease, habit, accident, or incident, of civilization, as the true cause of insanity; overlooking the fact that certain physical conditions, not common to the race, but essential to the manifestation of the phenomena of insanity, must have obtained, individually, before such "causes" could become operative; regardless of all other circumstances.

The first man, for example, will assert, as an indisputable proposition, that alcoholic intemperance is the cause, direct or indirect, of all manifestations of insanity!

"The demon alcohol" as this man sees it, has superseded all old fashioned "demons" of whatever *genus*, or species, to whose machinations all diseases, and death itself (when not inflicted by a supremely good spirit), were attributed by our, not very remote, ancestors; and should now be held responsible, in their stead, for all the misery of mankind.

Nor is this man alone in his belief. A good man, and true, within his own bounds—devoting all the energies of being to an ameliorating of the more painful conditions of his fellow-men—his notions are not singular; nor is his conduct peculiar to himself.

Limited and fanatical by nature; cramped by long service in a narrow field of labor; feeling voluminously, but thinking neither comprehensively nor rationally; toiling ever in the penumbra, if not the shadow, of superstition; habitually personifying phenomena, and ascribing general conditions to special antecedents as causes; having witnessed with increasing dismay, from year to year—in his professional as well as his civil capacity—the unstayed ravages of this apparently pitiless and unsparing monster—invading every land and every household—insidious

as pestilence; greedy and insatiable; feeding like a fabled dragon, with ever increasing appetite, upon all that is estimable in human nature; imperishable, and many-headed as a hydra; from whose many mouths proceed, incessantly, falsehood, delusion, violence, and crime; each giving instant birth, in turn, to all manner of kindred but ever-varying vices; it is not to be wondered at that he should so believe; nor that, being so filled, he should go his way vituperating alcohol, and all persons not already enlisted in a crusade of extermination against it—however hopeless of success the fanatical adventure. The measure of his understanding is full. It were folly to overflow it.

The next man, closely related to the first by capabilities, education, and experience; differing, temperamentally, only so far as to be able to accept the inevitable with less friction, or emotion, will insist that the insanity of civilization is a result of overwork, and mental strain, and other incidents of modern life, characteristic of a 'fast age and greedy people!'

In addition to an exhaustive arrangement of our most active and enterprising business men, because of their habits, and methods, of accomplishing ends without regard to means, or consequences—straining every fibre of being in pursuit of unworthy objects, success outweighing every other consideration, he may be expected to impeach everything modern without discrimination or reason. Under present circumstances, as the world seems to him to be wagging, women are everywhere disqualifying themselves for healthful maternity (the chief end of female existence) by unreasoning devotion, in their social relations, to absurd fashions; and criminal violation of natural and statutory laws in their relations of wives and mothers. Men are as unmistakably deteriorating, physically and mentally, because of such "maternal delinquencies," and their own acquired habits of life. And children are being dwarfed, or destroyed, by thousands, through the instrumentality of modern schools, and newfangled notions respecting the education of youth—both methodical and institutional.

"Doctor of Medicine" though this man be—and presumably familiar with the fact, if not its significance—that an evolution of science has been taking place within his time, by which old opinions and beliefs have been, and are being, revolutionized; his own profession, even, metamorphosed, dignified, and advanced—he is one of those, nevertheless, who are being carried forward by the stream of human progress somewhat reluctantly; lagging in the rear of the advancing column of humanity—marching like a discontented soldier in retreat, with vizor reversed, looking ever rearward. Intellectually myopic, he sees neither before nor after, to any considerable distance. He is not without his uses.

The burden of the third man's response will be an ascription of insanity to the general disorder of society incidental to existing forms of government and social customs; it being one of the penalties inflicted by nature upon mankind for violations of natural laws of justice and equality—effected more immediately by the excesses of the stronger, indulged while rapaciously feeding upon and devouring the weaker; and the privations that the weaker (and worthier) are compelled to suffer that the strong may luxuriate. All characteristic, he will say, of civilization.

Intellectually a hybrid—a mixture of philosophy and lunacy—this man sees no prospect—no possibility—of anything but disorder, under existing circumstances—and wonders, only, that more persons do not "go mad." As he sees things now, all governments are despotic, cruel, and unjust; established by usurpations of power, and maintained by violence and fraud.

The corner stone of each is a denial of the natural, inherent "rights of man," individual and social; upon which rests a superstructure of fictitious distinctions, and class privileges, abhorrent to justice, and obnoxious to the welfare of the race. All institutionalized religions as he sees them, are alike dogmatic and intolerant; affecting recognitions of the "fatherhood of God, and the brotherhood of man,"—but practically, historically, denying such recognitions; and representing God as an immensely magnified human despot, and but a few select people as worthy of divine favor. So, too, all social organizations are outgrowths of erroneous ideas respecting the natural equality of human beings, and their rights and duties under all circumstances, in every relation of life.

Our fourth respondent—a modern specialist by chance—may be expected to assert, with characteristic energy, and apparent sincerity, that one half of the insanity to be met with now-a-days, is attributable to untreated surgical diseases of the reproductive organs of women; amenable to treatment, generally overlooked by ordinary practitioners, and wholly neglected by the medical officers of our hospitals and asylums for the insane.

Congratulating this man, and his confrères in opinion, upon so great a medical discovery, including the localization of mental function in the female organism, presuming, analogically considered, that the other half of insanity, not accounted for gynæcologically, is ascribable to diseases of the male organs of reproduction, we may profitably pass to an examination of the next "expert," however superfluous further inquiry may appear to be.

The fifth interlocutor—he may as well appear now—to whom the problem under consideration appears to be exceedingly simple—will maintain, with an air of conscious superiority, the asser-

tion that insanity, in all of its phases, is but an upsetting of feeble-minded persons by trivial circumstances; such as disappointment in love, loss of property, or friends; grief, jealousy, or religious fervor; fear of hell, and the like; because of their ignorance, and lack of common sense. He thinks that people "go crazy" on certain subjects, such as religion, spiritism, christian science, or some other form of fanaticism; leaving out of consideration any possible morbid material element, however important such consideration may be to a scientific solution of the problem.

Superficial, vain, voluble, vulgar, probably profane; it may be anticipated of this man, who has never really thought of insanity as having any definite relation to civilization, that while casting about for material wherewith to amplify his discourse, he will bethink himself of sexual excesses and abuses as causes of insanity, and having struck the dead-level of his intellectual tastes, that he will descant indefinitely upon the familiar topic of sexual appetites and indulgencies; relating many anecdotes, and bringing into bold relief the fact that he looks upon all emotionally pious, as well as hysterical women, as erotic; all spiritualists as "freelovers;" and all ministers of religion as lascivious, if not licentious.

Fortunately, we do not have to listen to all that such men have to say, and may so leave him to indulge his own egotism and vulgarity, while we interrogate a worthier, if not a wiser man.

And here he is—slow and irresolute of speech at first, gaining time, as it were, for reflection, we need not be surprised by a final announcement of the conclusion, that civilization has nothing to do with insanity, generally or specially considered. Nor by the assertion that, according to his personal observation, nearly, if not all insanity, is of syphilitic origin. Candid, conscientious, resisting plausible testimony, fearing to be misled, he will attempt to fortify his position by facts; stating that he now recalls a great number of cases of insanity caused by syphilis —many—several—two or three—*one* well marked case; that of a man, about 45 years of age, who had, etc., etc. When a worthy brother begins to recite clinical history, from memory, in support of an absurd proposition in medicine, he is liable to become tedious.

Should we meet a seventh witness in this line of investigation, let us hope that he may be a man who has had sufficient mental training to comprehend the full purport of a question when plainly stated; as well as one who has dug through all merely superficial indications of valuable matter, and struck his intellectual pick into a matrix of pure ore. Not that surface indications are of no value. To an experienced miner they may be of great significance. But incompetent observers are liable to overestimate their intrinsic worth, or to mistake them for wholes of which they are but fragments. The uninstructed, indeed, often deceive themselves by holding fragments of truth in such relation to the eye as to permit them to occupy the entire field of vision. It is thus that the massive sun is sometimes totally eclipsed by the tiny fragment of a world, called the moon.

But what need of further illustration? No well-informed man, capable of weighing testimony, and applying general principles to special subjects, can fail to recognize the lack of breadth and comprehensiveness of commonly entertained views of the subject before us. Nor will it escape his observation that, vary as they may, they are all of the same general type, or purport; each consisting of certain limited speculations respecting the relation of insanity to certain "exciting causes," without an allusion to any inferentially essential precedent, constitutional preparation for the efficient action of such "causes," or the part played by civilization in effecting such conditions. While the fact is, not one alone of all the many exciting causes of insanity—not all of them combined—can produce the phenomena of insanity by their influence upon other than exceptional persons. Nor can all of the facts pertaining to the subject be taken into consideration and harmonized, by such limited speculations, however satisfactory they may be to those who entertain them.

It is a fact, for example, that neither alcohol, nor alcoholic intemperance, is peculiar to civilization. It is a fact, also, that alcoholic intemperance has been steadily decreasing among the more highly civilized peoples, for half a century or more, while insanity has been as steadily increasing.

It is a fact that our hospitals and asylums for the insane are populated, almost exclusively, by very ordinary people; men and women who have never suffered great vicissitudes of any kind, undistinguished persons, who have neither aspired nor endeavored, struggled nor attained, to any considerable extent, in any direction.

It is a fact that while men may, and do sometimes, destroy themselves by overwork and mental strain, in their pursuit of wealth, or fame, or means of personal distinction or enjoyment, not many ambitious, capable, successful men of affairs become insane, however effected, or premature, their dissolution. Rare exceptions to this rule attract attention because of their rarity.

It is a fact that the opulent and luxurious, who have become such by personal enterprise, sagacity and acquisition of means, however destructive of morals, or of health, their habits may become, do not, many of them, become lunatics.

It is a fact that, while pelvic and abdominal diseases of women are more frequently and intelligently recognized by the profession now than

formerly, and, because of modern modes of dressing, and pernicious habits of preventing conception, or arresting gestation, on the part of many women, they may be more numerous and prevalent, it may also be affirmed that more women, ten to one, have been consigned to hospitals for the insane — victims of needless or unskilful surgical operations, performed by ambitious and pretentious gynecologists, than have ever been restored to reason by the most commendable and skilful abdominal surgery.

It is a fact that no people have ever achieved greatness, or accomplished anything worthy of existence as men, without government—the worst being better than none—and it is likewise true that all civilized governments have been growing more and more beneficent, more and more considerate of the welfare of the governed, of all classes, for the past hundred years or more; growing in grace with the evolution of rationalism and morals that has characterized the present century; extending their blessings, more especially, to the weaker and more dependent classes.

It is a fact that "our time" is notable for its freedom from fanaticism, and the grosser features of superstition; there never having been a time before—strange as it may sound to the worshippers of antiquity—when the world was so nearly rational as it is now.

It is a fact that, historically considered and contrasted, this is not a licentious age, nor are we a lascivious people. Nor is syphilitic contamination, thanks to science and a more general diffusion of useful knowledge, nearly as extensive or destructive now, as it was formerly, among civilized peoples.

It is a fact that savage peoples have been, and are now being, decimated, if not annihilated, by the ravages of syphilis—notably the native Hawaians, and Alaskans — conveyed to them from civilization, without any history of concomitant insanity whatever.

It is a fact that while the longevity of individuals has not increased by, or with, the progress of civilization, the longevity of the race, so far as affected by civilization, has increased, owing to modern triumphs of peace over war, of science over pestilence, of reason over superstition, and a constant increase of food-supplies, and betterment of habiliments, including all manner of habitations, and the consequent survival of large numbers of persons otherwise destined to inevitable extinction.

How, then, does civilization affect the conditions of mankind—what does it do to men, physiologically or historically considered, whereby they are rendered more liable to become insane, than are savages or barbarians?

The answer, so far as present knowledge enables us to answer intelligently, is neither difficult nor complex. It is this:

Civilization, by its extensive and intricate co-operative combinations and activities—its arts, sciences, inventions, ethical perceptions, and consequent benefactions, not only rescues from otherwise inevitable dissolution, but nurtures, matures, and enables them to multiply by reproduction, multitudes of organically defective individuals, of the human species, in whose structure inhere certain potentialities, not common to the race, but essential to the manifestation of the phenomena of insanity, under any given combination of circumstances.

This answer is both explicit and comprehensive, and harmonizes, not only the facts already recited, but all facts pertaining to the subject, among which the following are offered as authenticated and suggestive, viz.:

The fact that all peoples now classified as "civilized," have become such by transitions from barbaric and primitive conditions; there being no evidence acceptable by science, that any originally civilized people ever existed, or that any people having become civilized spontaneously, ever relapsed to primitive, or intermediate barbaric conditions.

The fact that man, as related to the universe, is not an exceptional being, but subject to the same general conditions and contingencies that determine the becoming, continuance and disappearance, of all other specializations of living matter.

The fact that the same germinal and seminal prodigality that characterizes nature everywhere, forcing into being multitudes of superfluous individuals of varied capabilities, for whose subsequent development adequate provision has nowhere been made, necessitating an inevitable and immediate conflict and "struggle for existence," in which the weaker, or otherwise defective, must necessarily perish, is characteristic of mankind, as well as of other animals of the same order.

The fact that the first intelligent effort of mankind (called "instinctive" when exhibited by lower animals), to mitigate the severities, and supplement the deficiencies, of nature respecting the welfare of the race, consists of coöperative combinations of individuals for the accomplishment of ends otherwise unattainable; such as the capture and appropriation of food-animals, too strong or ferocious for individual prowess, or defense against enemies of like character seeking to make food of them; combinations by which two or more individuals are enabled to live where but one could have existed under other circumstances—the weaker ever being, if existence is to them a benefaction, the real beneficiaries.

The fact that all subsequent, successive, efforts of mankind, having in view the conservation of individual existence, instigated by organic sentiments, or love of life, of self, of offspring, and finally of the race, resulting in the various phases of civilization, are but extensions of, or evolu-

tions from, primary, simple, coöperative combinations of individuals, whereby the disastrous indifference and negligence of nature have been supplemented, and counteracted, in an ever-increasing ratio.

The fact that in the transitions from primitive conditions to civilized states, common to all civilized peoples, a constitutional diversification of individuals, as in the domestication of lower animals (a similar process), always takes place, corresponding in variations from original types to the degree of cultivation reached at any given time, finally necessitating recognitions of classes, or breeds, consisting of individuals presenting certain peculiarities, sufficiently similar to relate them as a group, while, at the same time, distinguishing them from the common stock. Classes among civilized peoples whose characteristics elevate them above the common level of humanity, and classes correspondingly depressed.

That the insane constitute a "class" of society cannot be rationally denied; inasmuch as the constitutional conditions essential to the manifestation of the phenomena of insanity do not obtain uniformly in the development of mankind—but few only of a given number of persons being capable of manifesting them.

That the insane, as a class, are defective, is also self-evident; defective manifestations of phenomena always implying defect of mechanisms, the activities and conditions of which are thereby reflected, the mechanisms of mind not excepted.

The constitutional peculiarities of the insane are, likewise, correlatable with the peculiarities of other defective classes of society, such as the anatomically asymmetrical, the physiologically unstable, the intellectually incompetent or eccentric, and others whose abnormal conditions find expression, phenomenally, otherwise than by manifestations of mania, melancholia or dementia; responding to excitation, sometimes, by exhibitions of hysteria, epilepsy, neuralgia, or uncontrolled impulses to irrational violence, unresisted propensities toward sensuality or intemperance, and not infrequently, a general perversity of feeling and perception, constituting the diathesis of crime.

The inference is therefore forced upon us, and may not longer be resented, that with every increase of coöperative complexity and activity—embracing larger and ever larger aggregations of individuals, with increasing comprehensiveness of purpose, and efficiency of action—attended by continuous growth of capability and accumulation of knowledge, from which evolutions of humane sentiments and ethical perceptions are inseparable, the number of individuals rescued from premature dissolution will increase, and the lower will be the stratum of "unfitness" from which such rescuing will take place.

What! Insanity, and other blemishes of civilization, attributable to the apparent benefactions, instead of the evident malefactions, of civil life? Impossible! Good and evil are not so closely and inextricably related.

So it may seem to the multitudes whose notions of good and evil are as incoherent as their knowledges of the universe are limited and superficial. But no well-informed, thinking man will shrink from the conclusion. The law of compensation is never suspended. Mankind can afford to accept the facts, or conditions of civilization, even as thus depicted. Reciprocity is the highest practical ethic of which mankind is capable. Public as well as private charity is quite as beneficent in its influence upon the doers, as upon the intended receivers of benefactions. He who neither apprehends the past nor trusts the future, is liable to suffer irrational doubts, and groundless apprehensions.

Civilization as a whole, or general condition of human affairs, is harmonious, however discordant its component features may appear to be when considered separately, or unrelated.

The higher and lower degrees of civilization are as continuous, yet discreet, in their relations, as are the upper and lower surfaces of any object geometrically considered. Whatever is higher, ideally or materially, grows out of, rests upon, and is inseparable from, that which was before, and is lower, or beneath.

He who should anticipate ripened fruit, without the necessary antecedents—blossoms, leaves, twigs, branches, stems and roots of a perfect tree, would be scheming both ignorantly and idly. He schemes as ignorantly and idly who hopes or expects to attain and maintain a high degree of civilization without a long series of antecedent lower degrees, with which the higher must remain forever continuous. Disrupt civilization as it now exists, and separate the highest attainment from its antecedents, as we pluck fruit from trees, and it would as inevitably, if not as speedily, begin to perish. We cannot think of civilization as thus dismembered, if we try, without confusion of thought.

As an illustration of civilization as it now is, take for example any great city of the world. It is a perfect illustration. Barbarism never built a great city. Look at its population! The richest and the poorest, the noblest and the vilest, the strongest and the weakest of mankind are here inextricably, yet discreetly and harmoniously, associated. Look at its streets and buildings! Temples, palaces, and magnificent mansions, with all of their accessories, many and beautiful, are here! But miles on miles of narrow, filthy streets, flanked by common dwellings, cottages and hovels, constitute an inseparable corollary. Imagine now, if possible, a transformation! Wave the magic wand of ideality, and

behold! these buildings all converted into palaces of equal beauty, sumptuousness, and magnificence! And these inhabitants—all transfigured! all strong, noble, intelligent, learned, rich, luxurious, free, and secure in every right or privilege acquirable by man! Alas! such a condition is not maintainable! Humanity may be crushed, but cannot be elevated, to a common level. Crush society to a common level, and the result will be a common condition of barbarism or brutality. Utopian philosophers and pious dreamers, of all ages and nationalities, have imagined and predicted the coming of all manner of impossible conditions of society, equally chimerical, because implying unification of human qualities, capabilities and necessities, and a final solidarity of good, and disappearance of evil. But whether pietistic or political, such prophetic dreams have ever been discredited by disappointment, as they ever will be, so long as the conditions of mankind are determined by growth and environment, and not by miraculous interpositions of hypothetical influences, which cannot be rationally contemplated, because of implied disturbances of the relations of sequences to antecedents, which it is impossible to regard as otherwise than inevitable.

ARE CONSERVATIVE AMPUTATIONS ALWAYS IN THE BEST INTERESTS OF THE PATIENT?

Read before the Mississippi Valley Medical Association, St. Louis, Mo., October 16, 1891.

BY CHARLES TRUAX,
OF CHICAGO.

In pre aseptic days, amputations were properly governed by an inflexible rule which taught that the first duty of the surgeon was to save every possible ounce of tissue, because, first, experience had demonstrated that the nearer the point of amputation approached the trunk and the broader the stump, the greater the risk of life; second, it was generally believed that in all cases the usefulness of a stump increased with its length.

These principles, still taught in all of our standard text-books (save one) and having been practiced by every eminent operator from the first records of surgery down to the days of asepsis, are in general use to-day—although the conditions forming the basis for their advocacy no longer exist, at least in their former weight and importance.

The first of these principles was formulated at a time when pyæmia, septicæmia, or like complication endangered the life of nearly every patient who submitted to an amputation, so that even if the patient survived both the original condition and the operation, his life was still in danger from some one of these dread maladies. It was found that this danger increased with the size and extent of the wound, so that surgeons were unconsciously led to vie with each other in their efforts to amputate with the least sacrifice of parts.

When the principles promulgated by the eminent Lister came into general use, they practically sounded the death knell of those forms of disease resulting from external wounds, and rendered obsolete the infallibility of the so-called "golden rule" which taught conservatism in amputations under all circumstances, for statistics collected from the records of nearly one thousand surgeons, embracing only such amputations as have been performed since 1885, prove conclusively that there are at least some exceptions to this rule.

Admitting it to have been a fact that, in the earlier history of prosthetical art, the longer the stump remaining after an amputation the greater was its value, it does not follow that it is so to-day, and I trust to be able to demonstrate that in some classes of cases and with certain limits the value or usefulness of a stump actually decreases with its length.

During the past quarter of a century the development of prosthetical science has advanced with a rapidity unprecedented in the history of the art. The first of the two great causes which stimulated this development may be found in the dreadful carnage and mutilation observed in the late Civil War which left thousands of veterans maimed by the loss of one or more limbs, for whom it was necessary to provide artificial substitutes.

The second, and now the most important factor in producing injuries necessitating amputation, is the great increase in the volume of machinery in use and the velocity with which much of it is operated. These two causes, combined with others of minor importance, have increased the demand for artificial limbs and developed a competition that has called forth the best efforts of our inventors, resulting in improvements so wide and varied in their extent as to place American artificial limbs, in point of efficiency and durability, second to none. To so high a state has the art been advanced that, under favorable conditions, makers of such appliances are enabled to construct artificial legs that permit the wearer to live and move in society without his being known or considered as a cripple.

An examination of a given number of applicants for artificial legs will, I think, demonstrate that only a moderate number are what may be termed favorable cases; *i. e.*, those permitting the use of the most perfect and complete forms of mechanism. Aside from these, a fair number could be selected for which limbs could be constructed that would furnish means for locomotion which, though more or less imperfect, would

be accepted by the patient as the best results that could have been provided, on account of the nature of the disease or injury. The balance of these applicants (and of the three classes they would scarcely represent the minority) can, at best, only secure unsatisfactory or miserable means of support, and for these subjects, unless they be in quite comfortable circumstances, life can only promise to be a burden.

Experience and investigation has convinced me that the percentage of favorable cases can be largely increased provided surgeons will familiarize themselves with the necessary mechanism of ordinary artificial legs and the relations existing between them and the stumps on which they are to be worn, and select their point of amputation accordingly.

If, out of a given number of cases, say only one-third of them are at the present time favorable ones, is it not possible to largely increase the number by amputating only at points which will provide stumps that are favorable? And if this be possible, is it not the duty of surgeons to familiarize themselves with these points and the reasons for their selection and, as Stephen Smith has well expressed it, "Have a humane regard for humane surgery?"

Notwithstanding that the old Golden Rule has been firmly impressed upon the minds of graduates and practitioners by the writings and teachings of standard authors from time immemorial, it is still a fact that a fair percentage of the more careful, conscientious and progressive surgeons of the present day have for some time been operating to a greater or lesser extent on an entirely new system—not only a new system but one that is in direct opposition to the ideas and principles that for ages have been accepted without question.

The old system as previously stated, was in all cases to perform an amputation with the least possible sacrifice of parts. The new system does not interfere with this in stumps for prehensile purposes, but in operations in the lower extremities it teaches that amputations should be made at such points as will enable instrument makers to construct the best possible form of artificial substitutes even if in so doing the surgeon removes tissues that, under former methods, would have been permitted to remain. The question of saving an inch or two, or even more, in the length of a stump is of no importance if its removal will secure a stump permitting the application of a more perfect and satisfactory appliance.

The conditions essential to a favorable stump for locomotion are a conical form without sharp corners or protuberances, with cicatrix underneath and preferably at the posterior margin, and length enough to obtain a good bearing in the stump socket. If these requirements are complied with and the stump possesses the necessary firmness to bear the contact with the socket, the patient, if properly fitted, will be enabled to operate the artificial part of the member in such unison with the natural portion that detection of the former is almost if not quite impossible.

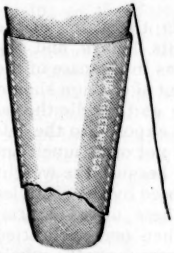

Fig. 1. Showing Section of a Thigh Socket.

The section of a thigh socket here shown will, I think, show why it is necessary that leg stumps should be of a conical form and may, at the same time, demonstrate that our text-books are in error when they teach that stumps should be so formed that they may bear more or less of the weight of the patient on their ends. When a section has been made through a bone, if the cut surface be not covered by an osteoplastic operation, no weight can be borne on the end of the stump. If surgeons will make their amputations at proper points not one ounce of weight need be carried by patients on the ends of their stumps.

It is a fact easily proven that, in most cases where a stump is so formed as to necessitate its bearing a portion of the weight of the patient on its end, it is usually a source of annoyance, because it not only forms an inferior means of support, but as the late Dr. Gross well expressed it, "it is constantly liable from the slightest causes to pain, irritation and ulceration."

As the internal diameter of a well formed socket decreases from above downwards (see illustration) and as its carrying power depends largely on the lateral pressure of the stump against its converging walls, it is evident that if the stump be of a conical form it will distribute the weight or pressure surface over a larger extent of the limb.

These sockets are carved or cut from the inside and so shaped that they fit the exterior of the stump as accurately as a kid glove does the hand, consequently the more circular the stump and the more nearly free it is from all uneven surfaces, the more perfectly it can be adjusted.

The position of the cicatrix must depend largely on the method employed in the operation. In selecting this method the surgeon should, by all means, locate the cicatrix to one side of the end of the bone and posteriorly if possible.

In amputations of the femur the value of the stump to the patient increases with its length until it reaches a point where this length precludes the use of what is known as the long or cylindrical form or joint.

In order, then, to choose the proper point in amputations of the lower third of femur, it is only necessary to learn the amount of space requisite for the working of this joint and where possible if there be no increased risk of life, operate

accordingly. By actual measurement, we find that in an adult this joint can be inserted and successfully used in an artificial limb provided three inches are removed from the lower end of the bone. Here, then, is the point of election and the one that should be adopted if circumstances be favorable.

In amputations of the tibia, the value of the stump also increases with its length, and the same rule should be applied as in the case of the femur, excepting that the point of election should be the juncture of the lower and middle thirds. Here the amount of surface exposed to the lateral pressure of the socket is not of as much importance as in thigh stumps, because the weight of the body is principally carried by the condyles of the head of the tibia. These afford a firm, unyielding surface which, when once well fitted with a socket, will, if necessary, carry the whole weight of the patient. It is, however, preferable to secure the advantages of a natural, conical-shaped stump by amputating below the calf, and thus increasing the bearing surface, and removing a part of the pressure from the head of the bone. Further, the amount of leverage increases with the length of the stump, so that if the operation be performed at the point indicated, the patient will have better control over the artificial limb than if the operation be at a higher point.

This point of election not only gives to the patient every benefit offered by amputations at or near the ankle, but it enables the instrument maker to display his mechanical ability to the greatest possible advantage.

Following injuries involving the middle and upper thirds of the tibia, many works on surgery advocate the leaving of short tibial stumps, that the patient may be provided with what are known as knee-bearing legs, or those in which the weight is taken on the anterior aspect of the flexed limb. It seems almost unnecessary to present arguments to demonstrate that such limbs would be clumsy appliances at best, owing to the imperfect connection between the natural and artificial portions. Short tibial stumps usually contract to a greater or lesser extent, and for this reason should be avoided. I would say that an amputation should not be performed within 3 inches of the joint. In cases where only from 3 to 4 inches of the tibia can be preserved, and there be no danger from inflammation in the joint, it would seem better, from my standpoint, to excise the remaining portion of the fibula. Its presence is of no benefit to the patient, while its removal facilitates the forming of a more conical stump, and insures a greater degree of firmness therein. Several cases have come to my knowledge, where the pressure of an artificial limb socket on the remaining fragment of fibula has proven a constant source of pain and discomfort, and one or two cases of ulceration I believe were due to this cause.

The fundamental principle that forms the basis for the new theory is the fact that the successful operation of a limb, whether natural or artificial, depends largely on the action of its joints. Therefore, unless the surgeon amputates at points that not only leave the natural joint intact, but provide below it sufficient leverage to swing the substituted portion, he will interpose obstacles in the way of the instrument maker that will prevent the construction of the best form of appliance.

To amputate through the knee or ankle-joint is to assume the position of the dog in the manger, for the remaining structures occupying the half of the space of the joint are of no use to either the surgeon or patient, but take up room that should be used for joint mechanism. The natural half of a joint remaining after a knee or ankle disarticulation is of no more use to the patient than the odd half of a pair of shears, for only in a limited number of cases can much, if any, weight be borne by the ends of the bones.

It is true that external knee-joints of the carpenter's rule pattern, such as are used in deformity braces and a sample of which is here shown (Fig. 2), can be employed after amputations either through or close to the articulation. Experience, however, has demonstrated that this joint is not a suitable one for long continued service if compelled to carry a weight.

Fig. 2. Showing Rule Bearing Joint.

The bearing surface of the cylindrical joint is at least twenty times greater than the rule joint, and from its construction it is so much stronger that it seldom gets out of order.

It required only a brief experience in the construction of artificial limbs to satisfactorily demonstrate to my mind that patients in large numbers are being crippled annually by tarsal and tibio-tarsal amputations, but it was with considerable hesitancy, even after an extensive investigation, that I first dared to advise the entire abandonment of all operations of this class.

My researches extended through the range of mechanics, I examined the laws governing the physiology of locomotion, inspected patients and their appliances from an esthetical standpoint, investigated the relative first cost of the various forms of compensative apparatus, and the approximate yearly expense necessary to keep them in order, collected statistics showing comparative results following tibial on the one hand, and tibio-tarsal, tarsal and tarso-metatarsal amputations on the other, ascertained the risk of life in these two classes of operations, and liability to re-amputation, and placed on record, for the first time, statistics showing the practical value to the

patient of these two classes of stumps, and in each instance arrived at the same result (*North American Practitioner*, July, 1891); and I stand here to-day in defense of this position, knowing that, so far as I have any knowledge, I am opposing the teachings of every standard work on surgery except the writings of Stephen Smith.

From a mechanical standpoint, we find the same principles operating in the case of the ankle as in the knee-joint, and unless the stump be short enough for the insertion of some form of a cylindrical joint like the one here shown

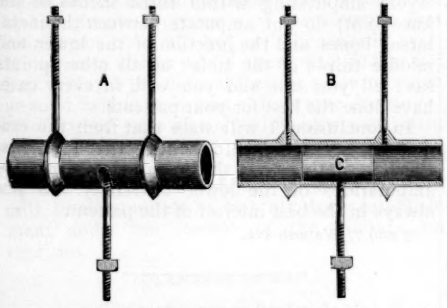

Fig. 3. Showing Cylindrical Joint.

(Fig. 3), or its equivalent, the manufacturer is compelled to resort to the rule pattern previously referred to. The latter, besides wearing away quickly, will not withstand heavy lateral strains. The operation and use of these rule joints is very unsatisfactory to the patient, and the necessity for their use should be avoided.

The laws of the physiology of locomotion show conclusively that the foot, or a portion of it, cannot be adequately substituted. It is true that Syme's operation will admit of the use of a whole artificial foot, but as its successful operation must depend on certain forms of construction and methods of attachment, unless there be space for the insertion of such mechanism, the foot will be more or less helpless and the patient crippled. Ease and grace in walking are not attainable unless the lower limbs are provided with levers or propellers by which the body is moved forward. Remove these levers at or below the ankle, and the patient is compelled to assume an awkward, limping gait, even if assisted by the best artificial substitutes made.

The principle of the lever is well exhibited in the flexion and extension of the foot while walking, the foot itself being the lever, the Tendo-Achilles furnishing the power, the ground the fulcrum, and the body the weight to be moved. To take a complete step forward necessitates the raising of this weight, because the trunk, at the time when the forward foot is planted on the ground (being then midway between its two oblique supports), has dropped until the pelvis is on a lower plane than before the step was commenced. The completion of the step requires the raising of the trunk to its original level. This elevation of the body is accomplished by the exercise of the lever power, because the extension of the foot then in the rear forces the body forward until the trunk is in a position perpendicularly over its advanced limb, and the step completed.

In walking, the heel and ankle rise on the ball of the foot, and by the lengthening of the limb caused by the extension of the foot, the body is forced forward, and is raised by the changing of its supporting limb from an inclined to an upright position. This falling and raising of the trunk produces the undulating motion so noticeable in walking.

If one or both of these levers are amputated at points where they cannot be artificially replaced, an awkward, limping gait will result. If one lever be removed, it becomes necessary for the patient to take a shorter step with the sound limb, otherwise he would be unable, for want of the extension previously referred to, to complete the movement—at least, without undue exertion. It is evident that the longer the stride, the lower the level reached by the pelvis, just as increasing the length of the base of a right-angled triangle decreases the height of the perpendicular, provided the hypotenuse remains the same. The taking of a short step with the sound limb, however, does not entirely compensate for the loss of a foot, but usually compels the patient to adopt a lurching movement of the body. This lurching, due to rotation of the pelvis upon the hip of the sound limb, is frequently assisted by a greater flexion and extension of both knees. These movements, whether made use of singly or conjointly, are directed toward the accomplishment of the same result, viz., the forward propulsion of the body, and the consequent elevation of the trunk until it has reached the level occupied by it before the step is commenced. Patients who have suffered amputations of this class, after being provided with artificial substitutes, rarely walk as well (and to walk at all requires the outlay of more labor) as where the amputation has been performed through the tibia. I have examined several patients with double tarsal amputations, and in each instance found them taking short, mincing steps, while those with double amputations of the tibia usually take full-length steps.

From a financial point of view, artificial limbs for Symes operations usually cost as much as if made for amputations at a higher point, but stumps resulting from osteoplastic, sub-astragaloid, medio-tarsal and tarso-metatarsal operations can be furnished with appliances at about two-thirds their cost. A full-length artificial limb,

however, *i. e.*, for amputation above the ankle, can be purchased from most manufacturers with a five years' guarantee as to durability, during which time it will cost practically nothing to keep it in order. Such a limb will wear from five to twelve years, while those for stumps ending at or below the ankle will usually last only from two to four years, and be out of order a good part of the time at that.

More important than, or rather the cause of the loss of the lever principle following tarsal amputations, is the breaking down or total removal of the arch of the foot, and it matters not which one of the specific operations of this class is employed, nothing is left of the arch that affords even a slight degree of elasticity; in short, the string of the bow is gone and the bow itself broken.

From a statistical point of view, I find that out of 2,135 tibial amputations reported to me as being performed between the years 1885 and 1891, 90.7 per cent. resulted in healthy stumps; 3.1 per cent. suffered re-amputation, while 5 per cent. died, leaving only 4.3 per cent. of stumps (including the re-amputations) upon which compensative appliances could not be worn. Of these tibial cases, 962 were seen by the surgeons after they were wearing, or had attempted to wear, an artificial limb, 86.9 per cent. of which walked with an easy movement and a comparatively graceful step.

Of 658 tarsal and tibio-tarsal amputations reported at the same time, 82.7 per cent. resulted in sound, healthy stumps; 8.3 per cent. underwent re-amputation, while 3.2 per cent. died, leaving 14 per cent. (including re-amputations) upon which prosthetical apparatus could not be worn. In this class of cases, 169 were seen after attempting the use of compensative appliances, 54 4 per cent. of which could walk well.

If we can judge correctly from the foregoing statistics, in every 100 cases of each of these classes of operations, we may reasonably expect the death loss to be in favor of tarsal operations as 5 per cent. is to 3.2 (but it must be borne in mind that in the majority of these cases reported the tibial operations were performed in preference to the tarsal, because of the greater extent of the injury, and the difference in mortality may safely be attributed to shock or complicating injury, and not to the fact that the operations were made nearer the trunk), while the ratio of re-amputations necessary will be in favor of tibial amputations as 8.3 is to 3 1. The number of healthy stumps resulting from these operations would be in favor of tibial operations as 90.7 is to 82.7, while the number of unhealthy stumps would also be in our favor, as 4.3 is to 14. Of those who attempt to wear artificial substitutes, we may expect to get favorable results in 82.9 in tibial and 54.4 following tarsal operations.

Owing to the unsatisfactory service resulting from the use of artificial arms and hands, the surgeon is not warranted in adopting radical methods in treating injuries or disease in the upper extremities. On the contrary, he should exhaust the last resources of conservative surgery and save all of the parts possible.

Instead of the old conservative so called Golden Rule which has formed the basis for amputations for ages, I would recommend, from my experience as a manufacturer and from the foregoing review of the question, the following: Avoid amputating within three inches of the knee joint; do not amputate between the metatarsal bones and the junction of the lower and middle thirds of the tibia; at all other points save all you can, and you will, in every case, have done the best for your patients.

In conclusion, I will state that from the evidence at my command, I believe that I am justified in stating that the so called conservative amputations of the lower extremity are not always in the best interest of the patient.

75 and 77 Wabash ave.

SOCIETY PROCEEDINGS.

American Public Health Association.

Nineteenth Annual Meeting, held in Kansas City, Missouri, October 20, 21, 22 and 23, 1891.

FIRST DAY—MORNING SESSION.

The Association convened in the auditorium of the Warder Grand Opera House, and was called to order at 10 A.M. by the President, Frederick Montizambert, M.D., F.R.C.S., D.C.L., of Quebec.

Prayer was offered by the Rev. Samuel N. Neel.

After considerable preliminary work, the reading of papers was proceeded with.

Dr. C. D. McDonald, of Kansas City, read a paper on

THE CAUSE AND PREVENTION OF INFANT MORTALITY.

He gave statistics showing that infant mortality soon after birth was 20 per cent. One of the principal causes was the exposure to a low temperature—a chilly room—soon after birth. He had been present when it had been necessary to wear an overcoat in a room where a newly-born child was exposed to bathing. Forcing sleep by soothing syrups to overcome the effects of this exposure was another evil. Another trouble was the forcing of food, such as crackers, and water and whisky into the young, inert stomach of the newly born. The mother who

refused to nurse her child from selfish reasons deserved the censure of the community. Statistics show that in the first year the infant mortality when the child is fed by artificial food is 50 per cent. With natural food the mortality was but 10 per cent. The best artificial food was pure cow's milk. Sterilization by chemical process was not thoroughly a success because vital principles cannot be supplied by chemical process, but sterilization was preferable to impure milk.

No starchy substance could be digested in the infant stomach. Starchy infant food is converted by the chemical processes of the stomach first into sugar, then alcohol, and then acetic acid. No sensible farmer would attempt to feed a calf hay. Hay is the natural food for a cow as much as solid food is for a man. Improper dressing—thin clothes—was also a prolific source of infant disease.

Prof. W. W. Daniells, of Madison, Wisconsin, thought that no one should be allowed to sell milk in cities unless he put his dairy establishment under the control of the sanitary authorities.

GLANDERS IN MAN,

was the subject of a paper by Dr. Joseph Sharp, of Kansas City, Missouri.

The doctor classed glanders with acute infectious diseases, such as tuberculosis. The especial feature of the paper was a report of a case which occurred in his practice, and in which he pointed out the difficulty of diagnosis in this obscure disease and gave an outline of the methods for microscopic examination, together with the best methods of cultivating the bacillus of glanders. The paper recommended that for preventing glanders persons who came in contact with horses having open sores or discharges from the nose should disinfect the hand with a solution containing a tablespoonful of equal parts of glycerine and carbolic acid in a quart of hot water, or ten grains of corrosive sublimate in a quart of water. In his report of the fatal case he had treated, that of a painter who became inocculated through a sore on the hand while handling an afflicted horse, the speaker aroused much interest.

Dr. Paul Paquin, of Battle Creek, Mich., in the discussion, reported a collection of seventeen cases of glanders in man which he had collected in the State of Missouri while living there. As an instance of the virulence of the poison, Dr. Paquin told of one man who, driving behind an affected horse, was struck in the eye by a spray from the beast's nostrils, a case of glanders developing rapidly and terminating in the man's death.

Probably the most interesting paper of the morning was that of Chief Justice Horton, of Kansas, on

THE NECESSITY FOR MORE STRINGENT LEGISLATION TO REPRESS EMPIRICISM.

He said that the mountebank of the nineteenth century, with brazen face and clarion voice, travels the length and breadth of the land proclaiming himself as "Diamond Dick," "Indian Bill," "Big Chief," or by some other equally euphonious and ambiguous title as he asserts his skill and disposes of his wares. It might not be justifiable homicide to compel him to swallow his own darksome nostrums, but the present laws are insufficient for his repression and, however beside himself he may become, we can hardly hope that he will so far forget his villainy as to administer unto himself that which he so recklessly deals out to others.

To protect the public, the American Public Health Association should recommend the enactment of statutes excluding from the medical profession those who are not competent by learning, skill and experience to practice, and punishing by imprisonment any who violate the provisions. No one should be permitted to practice medicine or engage in surgery unless authorized to do so by a competent board of government or State examiners.

Dr. R. Harvey Reed, of Mansfield, Ohio, said it was no easy matter for the medical profession to eradicate quacks or *pretended* medical men. Whenever a question of this kind was brought before the legislature the profession had to contend with two prominent factors, viz., the quacks themselves, who furnished large quantities of money, and second, the general press of the country. Why the press? Because the quacks paid the newspapers more money for advertising than the regular medical profession, consequently the press aided the quacks in trying to down the law.

The next paper read was on

WATER SUPPLY AND PUBLIC HEALTH,

by Mr. Allen Hazen, of Lawrence, Mass., in which the author dwelt principally upon the typhoid fever and cholera germs which infect impure water. Typhoid fever and cholera bacteria are taken into the system through food and drink. Pure water is therefore a necessity. If water is absolutely free from sewage it can be depended upon as being comparatively pure, although many waters not polluted by sewage have been known to breed disease. Flowing streams will partially purify themselves. Reservoirs and long channels where water flows and becomes ærated will not always purify it. Some system of filtration is therefore imperative, and the question to be decided is the best means of filtration. Several systems were described but all were said to be more or less defective.

At the close of this paper, Dr. Henry B. Horlbeck, of Charleston, S. C., presented some vital

statistics from the Southern States, showing the death rate among the colored population to be much greater than that of the whites, and offered a resolution asking the governmental statisticians in preparing their reports, to arrange them so that this fact may be shown. No action was taken on the resolution.

EVENING SESSION.

At this session appropriate addresses were delivered by Gov. David R. Francis, of Missouri; Gov. L. U. Humphrey, of Kansas, and the Hon. John T. Peak, of Kansas City, Mo. Following these came the President's Address, by Dr. Frederick Montizambert, of Quebec.

He said to the medical men of Kansas City and its vicinity the meeting was meant in part as an appeal to quicken interest in the more purely preventive work of the profession, to increase interest in the organization and working of the coast quarantines and health boards by which people are affected; the sewerage of cities; the disposal of garbage and refuse; the purity of water supply; the infectious diseases of animals now known to be closely related to those of man, as well as other much broader questions of modern sanitation.

To the non medical of all ages, sexes and conditions it is an appeal to take a lively and an active part in the great crusade against dirt and disease. In the words of Sir Spencer Wells, "Instruct your mayor and corporation, your clergy, and your own household, that every case of typhoid fever, or scarlatina, of diphtheria or small-pox, of measles or whooping cough, can no longer be looked upon as natural and providential; but that the existence of such preventable diseases is a proof of ignorance and negligence and a disgrace to the country, to the town and the family."

Every one can do a little if only to make one home or one room bright, more cleanly and more wholesome. Sunlight, pure air, and thorough cleanliness are natural enemies to disease germs. These cannot live where they have not their proper food, which is found in dampness, darkness, mould and dirt. The experiments of Koch, Ransome and others prove that the living germs of consumption, when exposed to the sunlight, lose their vitality in a few hours, or even in a few minutes, if the layer in which they are exposed be thin enough, and that even ordinary daylight, if it last long enough, will have a similar effect. 'There is no sounder philosophy than the old saying that, "There is more health in a sunbeam than in drugs, more life in pure air than in a physician's skill, and that sunlight may fade your carpets, but better that than have its absence fade your cheeks."

The President then paid a tribute to the memory of such members of the Association as had died since the last annual meeting. He then passed on and briefly reviewed the various contagious diseases as battled with by the health authorities of the country, together with the experiments entered into to overcome them. Asiatic cholera, la grippe, cancer and diphtheria were all touched upon, as well as disinfection and immunity.

SECOND DAY—MORNING SESSION.

Dr. Paul Paquin, of Battle Creek, Mich., read a paper on

VACCINE AND VACCINATION.

Dr. Paquin touched first upon the necessity for absolutely pure vaccine and told of some of the diseases that accrue from impure vaccine. The doctor had tested on rabbits, guinea pigs and fowls over 100 vaccine specimens. In these tests he said he had found such cheerful forms of bacteria as the bacillus pyogenes fœtidus, the staphylococcus pyogenes aureus, the bacillus septicus, and gangrene micrococci. These he said produced abscesses, gangrenous lesions, septicæmia and pyæmia.

Dr. Charles N. Hewitt, of Red Wing, Minnesota, spoke of unfavorable results from using bad vaccine in his State and of the difficulty in obtaining good vaccine, and gave his personal experience. Small pox, he said, is the same as it always was. An epidemic might sweep the country now as the country was practically unprotected.

Dr. Yesi, of Mexico, spoke of the compulsory vaccination of Mexico. Human vaccine alone was used. Lower animal vaccine is not cultivated. Better results from human than animal vaccine are obtained. A serious small-pox epidemic has not visited that country in about twenty-five years.

Dr. L. F. Solomon, of New Orleans, La., replied that in Louisiana each child must show a vaccination certificate before being allowed to attend school. About 90 per cent. of the primary vaccinations were successful. He favored the use of bovine virus.

Dr. Delos Fall, of Albion, Mich., read a paper on

THE DISPOSAL OF GARBAGE AND REFUSE.

He spoke of the intimate relation between typhoid fever and the accumulation of waste organic matter. The method used in New York is taking the waste out to sea and dumping it. Philadelphia recommended cremation. Chicago objected to the use of waste in filling holes and vacant lots and then building houses on them. San Francisco recommends cremation. Baltimore has dumps which are objectionable, and which will be removed as soon as a better method can be found. Cincinnati gives its waste to a desiccating company, which is under contract to

remove the same. In Charleston the city removes its own garbage; carts it out in the morning and generally gets through about noon. This waste is dumped into a salt water marsh. The cost is about $19,000 a year. Milwaukee pays $23,316 a year for collecting garbage by hand and $15,000 a year for disposing of the same. The Merz system of disposal of the garbage is used. Garbage is at present disposed of by dumping it into Lake Michigan, much to the disgust of the citizens, because the Merz system contract has expired. In Washington the removal is carried on by the contract system.

Dr. Edward Clark, of Buffalo, New York, made a report on the collection and transportation of garbage and refuse in cities. He advised full police power for the sanitary service of large cities. A galvanized iron tank holding about two or three bushels is the best receptacle for holding household garbage. The refuse tank must not be placed on the street or sidewalk, but the collector should be compelled to go in and get it, remove the contents, and replace the cover.

For transporting, garbage carts are preferable for short, and wagons for long hauls. The beds should be made water-tight, and should be flushed after each dumping. Any driver who failed should be instantly discharged. The bed should be covered with iron.

Evening Session.

The first paper was upon

RABIES,

by Dr. J. J. Kinyoun, of the U. S. Marine Hospital Corps. He said the disease was transmitted almost wholly by the canine and feline species. The disease prevails all over the world, except in Australia, where it is not known. He regretted that so little is known of its prevalence. He opposed the idea that the disease is confined to warm weather, the statistics showing that the greater number of cases occur in December and May. He discussed Pasteur's system and its success. Recognition of the disease is not easy in any animal in the early stages. He advocated the establishment and enforcement of strict quarantine regulations in order to eradicate the disease.

Dr. P. C. Remondino, of San Diego, Cal., read a paper on

AMERICAN CLIMATES AND THEIR PHYSICAL EFFECTS.

He said that it is well known that European immigrants soon lose their ruddy cheeks and bright eyes, with a certain loss of spirit, when they come to this country. They lived in happy disregard of all hygiene or science. In changing climate they followed no national rule whatever for the really necessary change of diet. He then extolled southern California, and compared it to the Garden of Eden.

A paper on the subject of

ANIMAL DISEASES

was read by Mr. Ernest L. Dundas, U. S. veterinary inspector at the Kansas City packing houses. He spoke strongly against the evil of diseased cattle being shipped to market. As soon as a farmer discovers that tuberculosis is about to ravage his cows, he immediately ships them off to market to get rid of them before they die on his hands. He recommended the police supervision of all milk dairies. He laid to the Jersey cow the blame of being most generally afflicted with tuberculosis.

Dr. Walter D. Green, of Buffalo, said that, while it might not be incorrect that the disease was quite common, and deserved close watching, still, the fact should only urge the physician to more earnestly fight against the spread of disease among his patients.

Dr. Peter Bryce, of Toronto, limited his remarks to tuberculosis in milk, and the manner in which the disease is most commonly transmitted to consumers. In Canada, he said, they never bred their milch cows, and in one city they never use a milch cow after she once goes dry; she is immediately sent to the butcher. The great question is how to tell a cow when she is so afflicted. It seemed to him that in view of the startling figures that there are 15,000,000 cows daily supplying the country with milk, and the fact that in certain abattoirs it has been shown that 5 to 10 per cent. of the cattle killed are tuberculous, there should be a most rigid and regular inspection of all milch cows, as is due the public.

NEW ORGANIZATION OF THE SUPREME BOARD OF HEALTH OF MEXICO

formed the theme of a paper submitted by Dr. Domingo Orvananos, of the City of Mexico. In this paper the outline of work covered by the Mexican Supreme Board of Health was given, showing a most complete system of supervision, a system which, on its face, would tend to make it one of the most thorough in operation in any country. One exceedingly good feature is the sending of a surgeon-physician with every ship leaving Mexican ports, who shall be held responsible for the sanitary condition of the vessel, and who shall be obliged to report to the Mexican consul at every port where the vessel may touch, and obtain from him a clean bill of health. This move was done in view of the fact that Mexico is preparing to meet the reciprocal treaties of all countries, thus calling for the service of an extensive maritime navy.

The session was brought to a close by a paper entitled

LAND HABITATION AS A PUBLIC HEALTH MEASURE,

read by Dr. George Homan, of St. Louis, Mo. The paper showed the benefits which would arise by the individual ownership of homes, as that would render less likely any communicable disease as well as render easier the fight against disease by admitting of isolation, a most desirable feature in combating disease.

THIRD DAY—MORNING SESSION.

Dr. Peter H. Bryce, of Toronto, read a paper entitled

THE PRESENT POSITION OF THE MILK SUPPLY PROBLEM FROM THE PUBLIC HEALTH STANDPOINT, AND SOME PRACTICAL METHODS FOR SECURING SAFE PUBLIC SUPPLIES.

Briefly, Dr. Bryce's summing up of the precautions necessary to healthy milk was thus:

1. It is especially desirable that a system of periodic veterinary inspection be exercised in addition to the dairyman's inspection.

2. Strong views should be held and exercised regarding the nature and quality of food for cows. All decomposed foods, as those which are liable to undergo fermentation, should be wholly avoided. The best foods are well ripened grains and grasses.

3. The stables of the cows are a point of great importance. Too often dark, damp, ill-ventilated and crowded pens have been the home of this chief of our food supplies. It is quite possible to keep even on a large scale a dairy stable free from the ordinary disagreeable stable odors. The water supply to the cows is of equal importance.

4. The care of the milk at the time of taking and subsequently is of all points at once the most difficult and the most necessary to supplying a wholesome milk. De Claux has said: "Cleanliness is everywhere the *sina qua non*." This means almost a revolution amongst farmers and dairymen. The sterilizing of all cans and bottles by steam or dry heat and the boiling of all strainers will be necessary.

5. The delivery of milk is of prime importance.

6. When milk has reached the consumer it must be placed in a refrigerator or promptly consumed.

FOURTH DAY—MORNING SESSION.

Dr. J. Ramon Ycaza, of the City of Mexico, read a paper entitled "A Few Considerations upon the Progress of Public Hygiene."

Dr. Nezario Lomas, of Moreles, Mexico, followed with a paper entitled

NOTES ON THE HYGIENE OF RICE CULTURE.

Moreles is the great rice-producing State of Mexico, and the paper touched upon the sanitary effects of this culture. The vast rice swamps were declared by the author to be most unsalubrious.

The report of the Committee on

CAR SANITATION

was read by Prof. W. W. Daniells, Chairman, Madison, Wis. He said the great difficulty in the heating arrangement of cars was that all systems thus devised are for heating alone, and that ventilation is not particularly sought.

Dr. R. Harvey Reed, of Mansfield, Ohio, said that if the public asked for these things, as it demanded fast trains and elegant car upholstery, it would get them.

Professor Daniells thought that cars should be made differently. Instead of covering Pullman cars with expensive tapestry they should be furnished with rattan or leather, as the cars on some of the suburban trains.

Dr. Joseph Sharp recommended comfortable air cushions that could be taken out and cleaned.

Dr. Charles N. Hewitt, of Minnesota, read a paper entitled "The existing methods of dealing with emigrants as respects infectious diseases in England and on English Ships, and the notification of infectious diseases among immigrants to the United States, the duty of the National Sanitary Authorities to the Sanitary Service of the States: an example of such an arrangement between the United States authorities and the State Board of Health of Minnesota."

Dr. A. N. Bell, of Brooklyn, followed with a paper on

"THE BATH AND ITS ADOPTION."

The Executive Committee reported to the Association two important resolutions. One was by Dr. Homan, of St. Louis, declaring it the sense of the Association that State and provincial inspection of the production of vaccine virus be established. The other resolution asks the establishment of a federal department of health, to have at its head a Secretary of Public Health—a Cabinet officer at Washington. Both resolutions passed.

Dr. Henry B. Baker, of Lansing, Mich., introduced a resolution to the effect that the Association hold its meeting in Chicago, in 1893, and that, so far as possible, the occasion be made an international congress of hygiene and public health, which was adopted.

The officers elected for 1892, are as follows:

President, Dr. Felix Formento, New Orleans, La.

Vice-Presidents, Drs. Walter Wyman, Washington, D. C., and Domingo Orvananos, of Mexico.

Secretary, Dr. Irving A. Watson, Concord, N. H.

Place of meeting, City of Mexico, date to be fixed by the officers of the Association.

Southern Surgical and Gynecological Association.

Fourth Annual Meeting, held in Richmond, Va., November 10, 11 and 12, 1891.

FIRST DAY—MORNING SESSION.

The Association convened in the hall of the Y. M. C. A., and was called to order by the President, Dr. L. S. McMurtry, of Louisville, Ky., at 10 A.M.

Prayer was offered by the Rev. D. M. Hoge.

The first paper read was by Dr. J. W. Long, of Randleman, N. C., entitled

ALBUMINURIA; ITS RELATION TO SURGICAL OPERATIONS.

He drew the following conclusions:

1. That neither ether nor chloroform rarely ever injures healthy kidneys.

2. That when renal disturbances from the use of an anæsthetic, the kidneys being healthy, do occur, they are due rather to prolonged narcosis, exposure of the patient, or perhaps to the combined influences of the operation and the anæsthetic.

3. That a mild degree of albuminuria or nephritis, especially if recent, is not a contraindication to the use of chloroform or ether.

4. That even in the presence of advanced or extensive renal changes, an anæsthetic may be employed, provided the patient or family are advised of the additional risk.

5. That of the two anæsthetics usually employed, it is yet a mooted question as to which is the safer so far as the kidneys are concerned, unless it be in obstetrical operations.

6. That, while it is by no means the rule, profound functional disturbance, and even organic lesions, may be induced by an operation, apart from the influence of the anæsthetic.

7. That such renal changes are due to reflex sympathetic action or sepsis, or both.

8. That operations in certain regions, notably the abdominal, genito-urinary, about the mouth and rectum, are specially liable to produce renal complications.

9. That a healthy condition of the kidneys minimizes, but does not obviate, the dangers referred to.

10. That albuminuria is always indicative of renal lesions, and should be regarded with distrust, but is not a positive contraindication to an operation.

11. That when albuminuria is associated with other evidences of advanced renal changes, no operation should be undertaken without first candidly stating to the patient, or friends, the dangers incident to the condition of the kidneys.

12. That, paradoxical as it may seem, an operation will sometimes relieve an albuminuria due to acute affections.

13. That no surgeon is justified in undertaking an operation without first knowing the state of his patient's kidneys.

SYSTEMIC INFECTION FROM GONORRHŒA.

Dr. Bedford Brown, of Alexandria, Va., read a paper on this subject. He cited five interesting cases of systemic infection from gonorrhœa. He believes that there are two channels for the absorption and transmission of the gonorrhœal microbe into the general system. One is by continuity of surface over the mucous membrane of the genito-urinary tract from the urethra to the kidneys. The other channel is through the medium of the great lymphatic system, from the lymphatics of the urethra to the inguinal glands, thence through the lymphatics of the system into the general circulation. He believes also that this microbe, so transmitted, is lodged at different points in the organism. The gonorrhœal microbe transmitted by continuity of surface over the genito-urinary tract, invariably induces specific suppurative inflammation. On the contrary, when transmitted through the lymphatics, the inflammation is not of a suppurative character, but assumes peculiar types; then the contact of the infectious microbe with the mucous surfaces produces suppurative prostatitis, cystitis, ureteritis, pyelitis, and then pyonephrosis. The absorption of the same through the lymphatic channels first sets up lymphangitis of the lymphatics of the urethra, then lymphadenitis of Cowper's glands, then of the inguinal glands, and inflammation of the connecting lymphatics. By further absorption it may induce septic phlebitis of the thigh, and finally synovitis, endocarditis, and internal destructive ophthalmitis. He also believes that, in certain cases, genuine septicæmia may be developed in the course of these complications. He thinks there is marked relative difference in the susceptibility of different constitutions to the systemic poisoning of gonorrhœal infection, as in other diseases. That the absorption and infection of the system from this cause is only in exceptional cases. The writer lays stress on gonorrhœal ureteritis following cystitis, as a part of the action of the gonorrhœal infection in its travels over the mucous surface of the genito-urinary organs towards its final destination in this direction, the kidneys. This complication is accompanied with pain, at times sharp and paroxysmal, usually dull and aching in character. These sharp paroxysms of pain extend upward to the kidney, and not downward toward the bladder, as in nephritic colic. Then again, there is soreness in the entire line of the ureter, increased on pressure, so that the course of the canal may be marked out clearly. Ureteritis is always established before nephritis begins in gonorrhœal infection.

The cases cited by Dr. Brown indicate that a

state of pyæmia or septicæmia may be developed by systemic infection from gonorrhœa in certain cases.

Dr. J. Edwin Michael, of Baltimore, Md., read a paper entitled

A REPORT OF SOME ADDITIONAL CASES OF EXTERNAL PERINEAL URETHROTOMY WITHOUT A GUIDE,

in which he said that the operation is one of great value both in gonorrhœal and traumatic cases, and he thinks one is justified in bringing forward any experience in it which may be of use to the profession. His results were very satisfactory, a fact which he attributed rather to the fortunate circumstance that his patients were largely free from grave constitutional disease, than to any method or application which he had to suggest. He had simply followed what he considered the precepts of good surgery as applied to this region of the body, viz.: free incision, free drainage, and as much of antiseptic surgery as the circumstances would allow.

The report of these eight cases brings up the number of patients on whom he made the operation of external perineal urethrotomy to seventeen, and the conditions which made the operation necessary include nearly all those which ordinarily indicate it. None of the patients have died at a period nearer than six months to the time of operation, and the deaths which have occurred were due to other causes. In the spring of 1887, he reported nine cases of perineal section without a guide, and he had only to add to the remarks made at that time, that increasing experience leads him to have more and more confidence in the good results of opening the perineum, and less fear of danger.

It is true that he had had unusual good fortune in operating on cases which, as a rule, presented no grave kidney lesion, but, while it must be admitted that such complication adds to the risk of the operation as much, if not more, than it does to others of equal gravity, he is firmly convinced that opening the perineum, in old stricture cases with bad kidneys, is much freer from danger than internal urethrotomy, or even dilatation. A case in point. About ten years ago he did an internal urethrotomy on a patient with an old, tough stricture. In forty-eight hours he had a temperature of 107°, and was very ill. The same patient returned to him a short time since. He could pass a No. 10 English sound with difficulty. The stricture was resilient, and closed after the sound to such an extent that urination was difficult and unsatisfactory. The patient had been having chills, and was somewhat nauseated and weak. His urine, although ammoniacal and ropy, contained no evidence of grave kidney trouble. He proposed a combined internal and external urethrotomy, and refused to do either operation without the other. The patient consented. He opened the perineum freely, and cut the urethra with the Otis instrument to 40 F. The temperature did not rise above 100°; the patient did well in every particular, and in three weeks he sent him home, passing a No. 36 F. instrument on himself.

FIRST DAY—AFTERNOON SESSION.

Dr. W. F. Westmoreland, of Atlanta, Ga., read a paper entitled

REDUCTION OF DISLOCATIONS BY MANIPULATION.

Dr. Joseph Price, of Philadelphia, Pa., followed with a paper on

COMPLICATIONS IN PELVIC SURGERY, AND HOW TO DEAL WITH THEM.

The author's reasons for choosing this subject were that the importance of recognizing the part that complications play in the work of the surgeon are not appreciated by the generality of medical men, by general surgeons, and, least of all, by the tyro in surgery, and by those who are anxious to begin their surgical investigations and trial trips by an entrance into the domain of abdominal or pelvic surgery. The complications in this special branch of surgery are primarily those of surgery in general, with many things superadded to render them formidable. It may be the intention of the surgeon to remove the appendages for a bleeding fibroid. In ordinary operations the removal of the uterine appendages is to the skilled abdominal or pelvic surgeon one of the simplest of undertakings. If, however, he attempts to accomplish their removal without holding in mind the complications that as a rule exist, or if he is a neophyte or an experimental dabbler, he will find too late, in many cases, that he has attempted an operation that he cannot finish, or if he does complete it, he has also sacrificed his patient, or rendered her worse off than before. In other words, to accomplish a cure, must abandon removal of the appendages, and perform hysterectomy, which has but little in common with the operation originally proposed. If this idea is still further carried out, we shall find that complications do not confine themselves to one system of organs, but extend to all surrounding structures, by reason of inflammatory adhesions. This is true of the bladder, ureters, intestines, omentum, stomach, and liver. Adhesions are the bane of abdominal and pelvic surgery, and hence we see that the greatest mistakes and failures are made by those who, from a knowledge of abdominal surgery simply have attempted to deal with pelvic inflammations. The abdominal surgeons who can be counted as really successful pelvic surgeons are, therefore, few. This is said with no intention of detracting from the importance of abdominal surgery. The

strictly abdominal organs must always enter largely into the domain of surgery.

With regard to irrigation, we must get out of our heads the idea that it is dangerous. Too often in the writer's experience has hot water brought about a speedy reaction in patients whose lives were almost despaired of. We are told that cases do not need flushing, that they do badly under it. Dr. Price believes that they do need flushing if they are desperate cases, and if they do badly, they do so not on account of the flushing, but because of the operation that preceded it. Next, we have a resort in packing. Gauze packing accurately applied to the bleeding or oozing surfaces, so that it can be removed without interfering with the otherwise completed operation, is of infinite value in hæmorrhage. It can be suffered to remain indefinitely almost, broadly speaking—at least, up to sixty or seventy hours, if absolutely clean and fresh, either salicylated or iodoformized. The drainage tube controls hæmorrhage. The drainage tube is currently spoken of as if it were an annex to pelvic surgery, easily dispensed with. The writer uses it almost without exception in adhesions. His results are better than those obtained without its use.

The plea of the paper was for absolutely exact, painstaking work, that shall leave nothing for regret, nothing to do over, nothing to explain, but shall stand out in the light of results as justifiable, scientific and perfect, when put beside methods that palliate without curing, and are no more a part of real surgery than is hypnotism refreshing sleep.

LAPAROTOMIES PERFORMED DURING THE PAST YEAR.

This was the title of a paper read by Dr. Thos. Opie, of Baltimore, Md.

The tabulated statement accompanying the paper embraced thirty-two abdominal sections made in the twelve months, beginning November 1, 1890, and ending October 31, 1891. The operations were performed consecutively as follows: Ovarian tumors, 6; chronic ovaritis, 7; fibroid tumors, 4; pyosalpinx, 5; retroflexion, with adhesions and dysmenorrhœa, 3; exploratory incisions, 3; extra uterine pregnancy, 1; abscess of ovary, 1; cyst of broad ligament, 1; cystic degeneration of ovary, 1.

Nine of these patients were operated on in the amphitheater before the whole class at the College of Physicians and Surgeons, the remainder, twenty-three, were operated on privately. Twenty-seven were white, and five were colored. The deaths were as follows: Oöphorectomy for pyosalpinx, 1; shock from ovariotomy, 1; oöphorectomy for acute mania, 1; and abdominal hysterectomy for fibro-cystic tumor, 1. Total, 4.

Stitch Abscess.—This complication occurred nine times, a much larger number relatively than he had seen recorded heretofore. While no case proved disastrous, several were exceedingly annoying in delaying patients in hospital. They occur most frequently in cases where the drainage tube has been used. The early opening of abdominal dressings for any purpose favors their occurrence. When the dressings remained intact for seven days there seemed to be the greatest immunity from the stitch abscess.

Drainage was resorted to in but three cases during the year. Case 2, ovarian and dermoid cyst, had a drainage tube in five or six days, and the writer is convinced that it retarded the patient's convalescence. He is of the opinion that too much flushing is done; that it is but seldom called for. A plentiful supply of fine, properly prepared elephant-ear sponges will do away with flushing in most cases, and remove the necessity for drainage. They are efficient helps in keeping the abdomen free from infection.

(*To be concluded.*)

American Electro-Therapeutic Association.

The first congress of the American Electro-therapeutic Association, was held at Philadelphia, September, 24th, 1891, with the following officers:

President, G. Betton Massey, M.D., Philadelphia.

Vice-Presidents, William James Morton, M. D., Augustin H. Goelet, M.D., New York.

Secretary, William H. Walling, M.D., Philadelphia.

Treasurer, George H. Rohé, M.D., Baltimore.

Executive Council, Horatio R. Bigelow, M. D., Philadelphia; Franklin H. Martin, M.D., Chicago; William F. Hutchinson, M.D., Providence; Frederick Peterson, M.D., New York.

The first annual meeting of the American Electro-therapeutic Association was held in the College of Physicians, corner 13th and Locust streets, Philadelphia, September 24, 25, and 26, 1891.

The first session was called to order Thursday, September 24th, 3 P.M., with President Massey in the chair. After the meeting came to order, G. Betton Massey, M.D., Instructor in Electro-gynecology in the Philadelphia Polyclinic; Physician to the Howard Hospital; to the Dispensary for Women, etc., delivered an address on

A PLEA FOR THE ASSOCIATED CULTIVATION OF SPECIAL EXPERTNESS IN MEDICINE.

Gentlemen:—It is with much pleasure that I pronounce the American Electro-therapeutic Association an accomplished fact. Organized amidst many expressions of doubt on the part of occasional workers in electro-therapeutics, it has already met with a reception which ensures for it a

career of active usefulness in the near future, and has enrolled a membership with which it is an honor to be associated. It is of this infant organization that I wish to speak to you, of its reason for being and of its responsibilities, as an illustration of an important means of advancing the sum of human happiness by exalting the skill of practical workers in a certain field of medicine.

Among the special societies of the day none occupy the peculiar position of an electro-therapeutic association. None other is devoted to the study of a single therapeutic agent or has a membership embracing workers in so considerable a number of specialties. Narrow in one sense, it is in another sense nearly as broad as medicine itself, since there are but few departments of medical work unrepresented in our present programme.

But such an Association as this differs in a more important particular from other special societies. While composed like them of students of a certain subject, the members of this association are not exclusively devoted to the questions to be considered here. They are rather a company of special workers in diverse departments seeking greater expertness in the administration of a certain therapeutic force. That the progress of the healing art as a whole has made it incumbent on certain of its practitioners to devote special study to this one therapeutic force is a sign that medical art is partaking fully in the general advance of science, which demands the services of experts in every field. At the very inception of this association I therefore wish to lay stress upon a proper idea of its reason for existence. Let no one suppose that we are here to uphold or study any exclusive system of treating disease. We are here merely as experts and students desiring greater knowledge of a favorite art, and I trust that you will debar from membership any person who does not give adherence to medical knowledge as a whole, and make proper use of any and all agencies of value in the cure of the sick.

A necessity of the times, as evidenced in recent changes in medical education, is the enforcement of a broader culture among physicians. There is no doubt that this will tend to increase the membership of special scientific associations, but it must not be forgotten that these organizations themselves arise in a more peremptory assertion of the natural law of supply and demand. There is always a vast difference between the merely cultured man and the expert; the one delights us, but to the other we turn for the advancement of human knowledge and for real help in the crises of life. As the community increases in intelligence, this seeking after experts will doubtless become more pronounced in all departments of human service of man to man above the mechanical work of the common laborer, and we may well conclude that the healing art will partake fully in the benefits of this natural selection. A demand for experts creates a demand for expert training, an educational thoroughness that is well known to be impossible in our medical colleges at present. To meet this emergency there has fortunately grown up of late two agencies: the one, the post-graduate college, to teach ordinary skill; the other, the special society, which bears to yet unconquered disease the relation of a well-disciplined army to the borders of a hostile and unexplored country. Thoughtless men neglect both, but the wise see in such agencies the means of advancing personal knowledge of the practical needs of their work. It is to be hoped that their establishment will quicken an evolutionary process in our profession that will finally develop it into an ideal organization of skilled interdependent workers; where each member, profoundly cultured in the universal sciences of medicine, will yet confine his work to that branch in which he is skilled. Such a specialism in parts and members is nature's ever present pattern for our admonition and imitation. When such a time has arrived, the fortunate objects of our professional care will receive that highest skill to which they are in justice entitled, and which they rarely receive at the present moment.

In this hoped for Utopia of professional conscientiousness, skilfulness and modesty, I am sure it will be impossible to duplicate the position of a recent correspondent, whose apparently careful and exhaustive article on the electrical treatment of uterine fibroids in a recent journal led me to request him to discuss the subject at this meeting. He replied that he knew almost nothing about electro-therapeutics, a fact that I had already suspected. So remarkable an admission of ignorance from a person assuming the position of trying and judging causes one to wonder if he had been equally frank with the thirty or forty patients mentioned in the paper before undertaking their treatment. Well might we beg a modern addition to the ancient Hippocratic oath in which the medical men swore not to "cut for stone;" an addition that would compel the non-expert to forever refrain from assuming responsibilities for which his training has been insufficient, and that would have rendered impossible that recent crop of jacks-of-all-trades who have "tried electricity." Of all the enemies of scientific research in electro-therapeutics these are the worst. Not even the pure quacks do the harm of these Pharisees, who blunderingly attempt to use a remedy in private when their patients demand it, and publicly condemn it on the strength of such evidence. These mistaken attempts at medical omnipotence should be frowned upon as savoring of a crime toward both the patient and the remedy.

The organization of a national electro-therapeutic association crowns the full emancipation of this remedy from the thralldom of quackery. Neglected by the profession in the years that elapsed between the memorable medical experiments of Franklin in this city and the discovery of the dynamo, the marvelous triumphs of electrical engineers have at last aroused medical men to the need of discarding ideas, methods and appliances that preceded the electrical new-world discovered some fifteen years ago. The assumption of new methods in electro-therapy has been extremely slow as compared with the industrial revolution which has already altered the face of civilized communities, but it is to be hoped that this body will be a powerful stimulus to the spread of scientific work in America.

Science is, however, but another name for truth, and in touching upon the objects of an association for the study of a force so well harnessed by natural law as electricity, it is evident that truth must ever be held as paramount in our discussions. Armed with laws that unlock the hidden power of this force over certain diseases, we are also equipped to demonstrate its utter uselessness in others by the application of an agnosticism that refuses to believe anything unless proven. But in clearing away the rubbish of unproven statements that make up so much of our archaic electro-therapeutic literature, we will by no means weed out the entire field of so-called medical empiricism. It is not alone in electro-therapy that the careless dicta of professional book writers has told us that such and such an agent is good for such and such a disease, without specifying the conditions that are necessary to save us from failure in actual practice. Read any classical work on general therapeutics that is ten years old, and see the blind empiricism from which all therapeutics have been evolved. There should be no nobler work for this Association than sifting the ancient claims for electricity, particularly in certain diseases of the nervous system, and establishing either their falsity or the conditions under which they are true. All remedial agencies are environed with limitations which vary with the dose used, the condition of the patient, etc., and this is particularly true of the one under consideration, which may in turn be a calmant, a stimulant, an absorbent, a solvent and a destructive agent. Here a hundred possible variations must be scanned to get the possible road to success, and hence this society is an eminently technical one. The broad question of the value of electricity in a certain disease should be subordinated here to exact data of the kind of current used, the dose, the duration and frequency of treatment, and the nature and position of the electrodes. All these should be specified before a claim is made that this agent is worthless in a given disease, since a different combination of the same factors and conditions might have led to success. Similarly, the conditions giving rise to the successful treatment of a disease that should be specified with equal minuteness in order that others may find it possible to verify and duplicate our results.

It is for such work that the American Electro-therapeutic Association is needed, and badly needed. I do not decry the presentation of electrical papers to our various general and special societies, but it is in the nature of such presentations that they must assume the polemical attitude of enthusiastic endorsement or wholesale condemnation of general facts—must deal in glittering generalities—to be other than tedious to their audiences. Such papers do little to advance our knowledge of a special subject, and the speakers upon them are rarely capable of intelligently discussing the whys and wherefores of success and failure that I trust you will bring into prominence at these meetings.

Among the questions that demand this critical investigation, may be mentioned the whole subject of the use of electricity in organic nervous diseases and in the neuroses. We are here handicapped, of course, by a still imperfect knowledge of many pathological conditions underlying these diseases, yet I think it is even now possible to make a broad division of the electro-therapeutics of nervous diseases into two groups, the one acting by transferred physiological processes through the agency of the spinal and sympathetic systems, and the other acting by virtue of a direct passage of lines of flow through, or by a polarization of, the primary or secondary seats of the disease. The indirect method is, unfortunately, the most common, since we are restricted to it frequently by the deep situations of the diseased areas, and in its various applications we are limited in progress by the limitations of these physiological carriers of our remedy. We are here in much the same position as in prescribing drugs, whose action is generally limited by the circuitous routes of absorption and circulation. It is doubtless in the method of direct action that electricity will yet make its greatest advances in the treatment of nervous diseases; a method which involves the possibility of concentrating a sufficient density of lines of force through a diseased area to accomplish an alteration in its nutritive condition. This is yet an almost virgin field in neurology, depending somewhat upon improved methods of conducting efficient currents through the dermic surface, and in estimating the possible future value of strong currents thus scientifically conducted to the actual seats of disease, I can conceive of but one organic basis of disease as absolutely and at all times unpromising and resistant, namely: that due to living germs.

Of the work before you in considering the value of electricity in gynecology, I need not

speak at length. This is regarded as a most important question in every gynecological society in the world, and while we are fully justified in considering its relative value as compared with other means, we will have a greater opportunity to discuss the many technical questions that belong to the subject. Here, indeed, is material for a society alone. The exact methods used by men of large experience in the various diseases of women are living questions that come home with force to any one who essays this work. Such things are rarely well shown in books, because of the changing extent of our yet imperfect knowledge. Owing to the many possibilities of direct treatment in gynecology, we have nevertheless already accumulated a most respectable series of exact therapeutic facts, with many useful rules deducible from them, and in the great activity now characterizing this branch of electro-therapeusis, an almost daily advance in our knowledge is inevitable. It is in this department of diseases of women, that electricity as a remedy has encountered its first real and bitter opposition from non-users in the profession, but we should remember that here its greatest value as a curative agent is becoming conspicuous, for "the blood of the martyrs is the seed of the faith." To its good work of restoring health and function by combating diseased processes, has been added the labor of combating unwise surgery, that, in a laudable effort to perfect a useful technique, has sacrificed thousands of patients and parts of patients on the altar of harsh experiment.

Among other branches of the work, great interest attaches also to the electro-therapeutics of visceral and circulatory diseases, of dermatology, of strictured canals and orifices, and of the nasopharynx. Each of these questions will be infinitely better understood when discussed by experts, and cannot fail to be placed on a higher plane of scientific exactitude by each one of our annual gatherings.

As important accessories to these advancements in our ability to cure and control disease, certain questions of detail common to all this work demand our attention. This Association should take action on the important matter of securing a uniform and reliable calibration of our milliampère meters. Many of the instruments supplied to the profession are improperly graduated, and others soon fail to read correctly through imperfect construction. This is surely a matter of greater importance than the correctness of the scales used in trade, over which the State wisely maintains a supervision. In the absence of Government assistance in verifying our instruments, some practicable substitute should be devised. Our Faradic batteries are also yet far from perfect, besides being devoid of intelligent means of graduation, and I trust that you will take early steps to bring this somewhat old-fashioned instrument up to the high character demanded by modern work.

Such, in briefest language, are some of the reasons why special workers should meet in occasional conclave. To the unfortunate sufferers from the affections coming under our care, this meeting is fraught with high consequences. Unless we can go back to them with an added power over disease, our coming here is bereft of its highest value, for in the presence of human suffering, we can recognize utility alone as our measure of results.

Dr. Bigelow, Philadelphia: I think some resolution should be made on the President's able address, and I move that a committee be appointed to take action thereon and report at our opening session to-morrow, and that the President be requested to appoint three gentlemen for that purpose.

Motion seconded and carried, and Drs. Bigelow, Goelet and Morton appointed.

(*To be continued.*)

STITES' TEST FOR CARCINOMA.—On October 17th, at the surgical clinic, I removed for atrophic scirrhus the right breast of a female, aged sixty-one. In the presence of the class the tumor was immediately subjected by Dr. W. M. L. Coplin to the test of Mr. H. J. Stites, of Edinburgh. The method of examination was that furnished me by Professor Chiene, of Edinburgh, which I give in his own words:

1. Excise the mamma.
2. Wash thoroughly in water to remove blood.
3. Place in a 5 per cent. solution of nitric acid (B. P.) for ten minutes.
4. Wash in cold water for five minutes.

By the time these procedures are executed the axilla is cleaned out and the vessels tied. The mamma is now examined; the carcinomatous structure appears a dull white, like the eye of a boiled fish, the healthy tissue translucent. When any such reaction is seen additional tissue should be removed at the corresponding point.

In removing the carcinomatous breast, Professor Chiene directs that its relations to the circumferential tissues should be marked by the knife, so that after the test has been applied to the mass excised the situation of any outlying, unremoved diseased areas can be fixed.

In the case operated upon the foregoing directions were carefully followed by Dr. Coplin, who demonstrated to the class that the infected tissue became of the characteristic "dull white," resembling egg-albumen, while the uninfected tissue appeared translucent and gelatinoid, affording a striking contrast to the carcinomatous structures. The reaction in the axillary glands seemed even more marked than that in the breast; it therefore would, perhaps, be well always to retain one gland for comparison with those treated with the acid.

The test described by the distinguished Scottish surgeon as devised by his assistant, Mr. Stites, appears to be a most perfect one. It is to be hoped that future trial will show that it can be depended upon, and that it can really be accepted as a guage of the thoroughness and sufficiency of removal of carcinomata, not only of the mamma, but also of other parts.—John H. Brinton, M.D., in *Med. News.*

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE $5.00
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any time and be sent to
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, NOVEMBER 28, 1891.

DIET IN FEVER.

The dietetic management of the febrile state is always a matter of interest, and an extract in *L'Union Médicale* from a work by MAUQUAT, soon to appear, covers the ground so logically that we have thought it desirable to review it for the benefit of our readers.

During an acute fever, the appetite is usually diminished; the mouth is dry from the diminished salivary secretion, and this latter feature is an index to the secretions generally throughout the alimentary tract. In the stomach the gastric juice is secreted not only in diminished quantity, but is changed in quality, the hydrochloric acid being much reduced. The frequent craving of febrile patients for acids is thus explained, and although we do not have to resort to the means of the wise old doctor who, before the days of the clinical thermometer, found that a child was feverish by asking which it would have, an orange or some candy, and finding that it preferred the orange—still the lesson is not useless to-day. The pepsin, on the other hand, is not diminished, at least, enough is always present to carry on the functions of gastric digestion if the acid be supplied. In the duodenum it is found that the pancreatic and biliary secretions are diminished, and that the digestion of fats is thereby rendered nearly negative. In addition, the absorptive functions of the alimentary canal are decidedly below normal.

The febrile state results in the production of an increased amount of tissue change, with corresponding increase of poisonous waste products, while the exciting cause of the fever also adds to the poisons elaborated and calling for elimination. In typhoid fever, the blood contains 7 to 9 per cent. of extractives, while normally it should contain 4 per cent., according to ROBIN.

A low diet protects the impaired digestive tract, is a powerful means of lowering temperature, favors absorption of liquid from the tissues, thus relieving congestion, and prevents the admission to the circulation of alimentary poisons; but, on the other hand, it prevents tissue repair, and allows the body to waste. It therefore becomes a cause of weakness, and prolongs convalescence.

Food capable of proper digestion and assimilation prevents an excessive bodily wasting, and furnishes strength to the patient to combat the disease, but overfeeding is disastrous. It introduces into the alimentary canal material which can be neither digested nor absorbed, and which acts as a foreign body, exciting at times vomiting and diarrhœa. It frequently causes an elevation of temperature and an increase in the pulse rate, favors a tendency to exudations, and in the case of albuminous food, often gives rise to poisons which, when absorbed, either produce symptoms or increase the burdens of the emunctories.

Proper feeding in fevers may therefore be said to consist in giving to the patient such articles of food as can be digested and absorbed, in quantities that can be completely managed by the digestive agencies, avoiding substances which, for mechanical or chemical reasons, might be contra-indicated. Take the medium view advocated by Hippocrates, who observed that it was as bad to feed too little as to feed too much.

Eggs as a food in fever are distinctly contra-indicated. No class of albuminous foods requires so much hydrochloric acid for digestion, and this is the element of the gastric juice which is wanting. The use of this acid after feeding seems insufficient. Meats fall into the same category, and are hardly ever available as foods unless administered in small quantities, very finely subdivided. The diminished motility of the stomach, which favors the retention in that

organ of food, directly favors the decomposition of meat.

Various views have been held regarding milk. G. SÉE says that it is badly digested, and DUJARDIN-BEAUMETZ believes that its principle utility is to be found in the water and salts which it contains. It is, nevertheless, a food which is generally relished, and which certainly is most useful in fevers. If hydrochloric acid be administered with it, there can be but little doubt that it is fully digested.

Bouillon is often decried because of its lack of nutritive value. As ordinarily made, it does not contain much albumin, but it is rich in salts. According to A. ROBIN, there is in typhoid fever a true mineral inanition, and he regards bouillon as an excellent means of supplying the deficiency.

It is more than improbable that the organism can utilize mineral water brought to it in this shape, and it seems certain that these very salts hinder the antitoxic action of the liver. Beef tea should therefore rather be regarded as a palatable means of administering water. Although gelatine alone is of but slight nutritive value, yet it is usually agreeable to the fever patient, and when administered with some form of albuminous food, its nutritive value is markedly increased. Starches are well digested by fever patients, and, together with sugars, should constitute an important part of their diet. These latter substances are best administered in drinks. Drinks, particularly of pure water, lemonade, diluted wine, aerated waters, rice and barley water, are of the greatest value to these patients. Fats should not be given, because of the failure of the pancreatic juice. Cream, however, is an exception, and, as found in milk, is well borne. This outline may serve well as a general guide for feeding in fevers; always to be modified by the particular conditions present in any special febrile process.

THE AMBULANCE SERVICE OF GENERAL HOSPITALS IN CITIES: "THE LITTLE WARD ON WHEELS."

One of the modern improvements of hospitals is the ambulance—inclusive of the bright young surgeon. If we mistake not, twenty years ago there were not in the country more hospital wagons than could be counted on the fingers of one hand, while now there are in some cities eight or ten thoroughly equipped vehicles. The last report of the superintendent of the Johns Hopkins Hospital alludes to the want, felt at that institution and in the city of Baltimore, of some adequate means of transit for its patients. DR. HURD writes as follows: "An ambulance is desirable and would serve a most useful purpose. There is at present no ambulance system in Baltimore and accident cases and cases of severe disease are forced to rely upon the police patrol wagon, which does not furnish any adequate shelter from the sun or storm, or good facilities for the transportation of the sick and wounded. The excellent ambulance service which exists in New York should be adopted in this city. Many applications are made for the services of such a vehicle, and it is to be regretted that the hospital does not possess one."

In nearly all our cities where any two institutions come into friendly competition for surgical and police practice the ambulance becomes an absolute necessity, otherwise the institution that is most centrally located will outstrip the others, if the latter do not take steps to provide the "little ward on wheels." And further, when two such conveyances come into competition, it is most interesting to observe how the service brightens up, and picks up new points and appliances—all of which redound to the better care of the sick and wounded. Of the character of the young ambulance surgeon in a certain city of our acquaintance—where the appointments are made as the outcome of competitive examination—we cannot forbear to quote the opinion of a judge, of high repute in criminal and violent cases, that these young men are almost always good witnesses, intelligent, clear-headed and courteous, and make a deep impression upon the jury as well as on the jurists. The public or court duties of the meritorious surgeon has, in this way, proved a useful introduction to valuable connections. Ordinarily there is a warm enthusiasm and *esprit de corps* on the part of the surgeons which serves the patient's interests during many a critical moment, besides yielding a various and vivid experience very different from that which awaits the budding practitioner who has no public functions or advantages. In some cases the ambulance surgeon is the "junior house" and is required to give six months to the ward-work of his hospital be-

fore he goes out on the wagon to act upon his own responsibility—a rule which has been found to shield the young surgeon against allegations of "total inexperience" and the like. In some of our cities, the volume of business performed by the ambulance service will exceed an average of a thousand cases per annum to each wagon, or over three calls per diem. In the case of a large conflagration or other great casualty, a great amount of labor falls on the ambulances; and they become the means of relieving a great deal of suffering and of preventing much injurious delay. Unauthorized demands upon the service, or "fake calls" as they are sometimes termed, are a detriment to its earlier periods. They tend to diminish, however, as the service matures, especially if harmonious relations with the police are maintained and if an efficient signal system is supplied.

The question of the annual cost of an ambulance is an important one to all hospital authorities who are canvassing the subject of its introduction. The cost of the original plant may vary greatly in different localities, for some institutions are so constructed as to have no space to spare for ambulance purposes, while others can be adapted thereto quite inexpensively. From some inquiries recently made, we judge that the average outlay for a plant, made *de novo*, may be stated at one thousand dollars, while the running expenses per month need not exceed one hundred dollars per month during the first year. This pre-supposes that no salary is paid to the house-surgeon who acts as ambulance surgeon. It would be a better plan to increase that monthly amount by thirty or forty dollars, to be set aside as a partial recognition or *vourceur* to the young surgeon. The hospital should supply uniforms to all who appear in public in connection with the ambulance. Numerous considerations—nearly all of them referable to the public good—make this step advisable, although the expense account is materially increased thereby. In conclusion, the American system of hospital ambulances, as the foreign journals generally designate the system, as it has gradually grown up in this country, may now be seen in some European cities, and so far as we have heard, no hospital, either abroad or at home, that has once undertaken this line of service, has ever been content to be deprived of it. The ambulance is, in its essence and development, a humane and life-saving institution, almost as much so as the hospital itself; it is a kind of wheeled extension of the examination ward. It is in fact permissible to call it "the little ward on wheels."

ACTING ASSISTANT SURGEON U. S. A.

We are in receipt of an attractive little volume, having a title as "Records of the Association of Acting Assistant Surgeons U. S. A.," which gives an insight into the reasons for such an organization, with a brief sketch of those who are at present identified with it.

The purposes of the Society are mainly to work for a proper recognition of the corps, on the part of the government.

In the first place, it was very unfortunate that the title of *Acting Assistant Surgeon* was given this corps, as the name carries with it a feeling that it is applied to a substitute, and substitutes among the soldiers during the war were odious and not held in high estimation by any one. These Acting Assistant Surgeons should have been given an actual rank, as they were called upon to perform all the varied services of a commissioned officer, and we are ready to bear testimony to the efficiency, professional skill, and arduous labors of a goodly number of these physicians who were in the service during the late war.

Inasmuch as the government finds it necessary to continue the service of fifty Acting Assistant Surgeons, justice demands that the offensive title of *Acting* should be dropped and that of Assistant Surgeon of the second grade established. The officers of the grade to rank as Second Lieutenant, and where the officer is below the proper age, he should be allowed the privilege of examination for promotion.

In this connection we suggest to the officers of the government in both the Army, Navy and Marine-Hospital Service, the eminent propriety of holding examinations at stated intervals in all the principal cities of the Nation. This would have a most favorable influence in popularizing the government service. We believe the Navy is always short of medical officers, and perhaps this may be said of the other departments. The convening of a board of examiners in Chicago, Detroit, Cincinnati, Louisville, St. Louis or New

Orleans would have a good effect upon the National service and also upon the medical profession in those cities and the country tributary to them.

The Surgeon-General of the Army and Secretary of War are loudly called upon to take such action as may be necessary to bring about needed improvement in the rank and title of those who are recognized as honorable men and skillful medical officers, but who are serving our country under an unjust and odious designation.

STITES' SURGICAL CRITERION FOR CANCER.

DR. JOHN H. BRINTON has put into practice at his surgical clinic at the Jefferson Medical College a new test for cancer, proposed by MR. H. J. STITES, of Edinburgh. The method, as given by DR. BRINTON, in the *Medical News*, October 31, is that which was furnished him by DR. JOHN CHIENE, of the Royal Infirmary of Edinburgh, and reads as follows:

"1. Excise the mamma.

2. Wash thoroughly in water to remove blood.

3. Place in a 5 per cent. solution of nitric acid (B. P.) for ten minutes.

4. Wash in cold water for five minutes.

By the time these procedures are executed the axilla is cleaned out and the vessels tied. The mamma is now examined; the carcinomatous structure appears a dull white, like the eye of a boiled fish, the healthy tissue translucent. When any such reaction is seen additional tissue should be removed at the corresponding point.

In removing the carcinomatous breast, PROFESSOR CHIENE directs that its relations to the circumferential tissues should be marked by the knife, so that after the test has been applied to the mass excised the situation of any outlying, unremoved diseased areas can be fixed."

The above description, although applied in this instance specifically to mammary cancer, need not be limited to that affection, but may be used for other diseased glandular structures. DR. BRINTON'S case, operated upon October 17, was, however, a mammary cancer, and the demonstration of the test before the class was made by DR. W. M. COPLIN, while the surgeon proceeded with the removal of the diseased structures. The reaction in regard to the infected axillary glands was more distinctly noted than in the breast tissues; it would, therefore, be proper always to retain one of the excised glands, without the treatment by the acid, for purposes of comparison. This procedure or test devised by MR. STITES, who is spoken of as an assistant of the distinguished Scottish professor of surgery, "appears to be a most perfect one," as DR. BRINTON says. It is worthy of careful trial in order to ascertain if it can be relied upon under differing conditions as regards the sight and nature of the malignant growth. It will be no small gain to surgery if this test can really be accepted as a criterion or gauge of the thoroughness and sufficiency of the operative steps for the ablation of cancerous masses, not only of the mamma, but also of other parts.

DOMESTIC CORRESPONDENCE.

Deming (N. M.) as a Health Resort.

As regards Deming for a health resort for people coming from the East, affected with pulmonary or bronchial troubles, we would say:

Deming is situated on a plain, surrounded by mountains, comprising an area of about 50 miles square. This is at an elevation of about 4,500 feet above the level of the sea. The temperature on this plain is always mild, never going below the freezing point in day time during mid-winter, while the heat during the summer never becomes extreme. The rainfall is exceedingly slight, limited principally to the months of July, August and September, while the air during the rest of the year is comparatively free from moisture.

The water-supply is received from the Black Range, which is a spur of the Rocky Mountains. The water is the purest in the territory, being filtered through a stratum of sand for a distance of 25 miles before reaching town; thereby freeing it from all impurities, before it is used.

With these facts in view, we would state as follows: All patients affected with pulmonary tuberculosis coming from the East to this country, before the disease has progressed too far, who will take the proper amount of exercise in the open air, live on a healthy diet, have nine chances out of ten for their ultimate recovery, as proven by personal experience during nine years of practice in this part of the territory.

Patients affected with chronic bronchitis find it advisable to remain from July to January or February, when the winds commence to blow, experience having proven, that during that time of the year they make the most rapid and satisfactory progress; but even in the windy season seldom have really obstinate cases of bronchial troubles come under my observation.

With the railroad facilities, which this place enjoys, the pure, dry atmosphere, the unusually good water, the equable climate, which permits people to stay out of their dwelling at all hours of the day the year round, we would recommend Deming most highly as a suitable point for establishing a health resort.

J. W. WILLIAMS, M.D.

Deming, New Mexico.

THE *Sanitary Record*, of London, owing to the financial difficulties of Messrs. W. H. Allen & Co., the publishers, has passed into other hands, and is no longer edited by Miss Hart.

BOOK REVIEWS.

MEDICAL COMMUNICATIONS OF THE MASSACHUSETTS MEDICAL SOCIETY. Part II of Volume XV. 1891. Boston: David Clapp & Son.

This is a notable issue of a long and valuable series. Very few pages are allowed to run to weeds in these "Communications." We desire, in the first place, briefly to draw attention to the paper entitled the Shattuck Lecture, by Dr. Edward Cowles, of Somerville. Its subject is "Neurasthenia and its Mental Symptoms." This essay is a long one, comprising, as it does, over a hundred closely printed pages, but it is none too long, as being the best résumé of the subject that has appeared in ten years. Dr. Cowles is the medical superintendent of the McLean Asylum, or branch for the insane of the Massachusetts General Hospital, and appropriately addresses himself to some of the parallel workings of pathological fatigue and certain of the forms of insanity which have their etiology in common, namely, in nervous enfeeblement. The fundamental idea of the writer is that there is a moderate auto-intoxication even in normal fatigue, from or after the discharge of energy, by the toxic products of exercise, always formed in both nervous and muscular structures. These toxic elements tend to accumulate in the blood and tissues of the neurasthenic patient, and manifest their ill-effects by a local or general inanition and auto-intoxication greater in degree than that which marks the advent of a temporary and repairable weakness of the nervous tissues, such, for example, as is seen in the evening tire of an active man. There are visible changes in nerve cells consequent upon normal fatigue, thus supporting the hypothesis and argument of those who teach that there is a molecular and chemical alteration in pathological fatigue, manifested as a condition of exhausted nutrition. The question of the influence of autogenous toxic substances is approximately answered by the writer in the affirmative from the analogies which are presented by our rapidly growing knowledge of the action of bacteria in the body. Just as ptomaines are noxious to the microörganisms producing them, so are normal cells injured when the products of their own activity accumulate about them. The following is Dr. Cowles' systematic definition of the disease he is considering: "Neurasthenia is a morbid condition of the nervous system, and its underlying characteristics are excessive weakness and irritability or languor, with mental depression and weakened attention." He dwells with special emphasis on the position that the mental symptoms of pathological fatigue are entirely harmonious with the physical phenomena of neurasthenia, and that these, as far as they can go, are in their turn in agreement with the march of events in melancholia. And he adds that neurasthenia may be regarded as the initial term of many another nervous derangement having wide and varied causations. Dr. Cowles' remarks upon two of the prominent specially neurasthenic conditions are interesting. The first of these is the state of "morning tire," or "morning depression." This is sometimes termed the "morning misery;" but the essential element is tire, where the patient awakes in the early morning and is unrefreshed by sleep. The second is that paradox of neurasthenics which is known as the *anæsthesia of the sense of fatigue*, a descent towards the depths of nervous prostration which indicates the waning of sensory power. The sense of fatigue—a natural sensation—ceases to guide the patient. He is conscious of both mental and physical incapacity, but he cannot agree with those who warn him against over-exertion.

These patients are both self deceiving and misleading to others: these are they who "travel on their nerves" and who are sent abroad to recruit by travel and a change of scene, when they have only the illusory appearance of the strength to undertake it. So, too, should be remarked the converse of this proposition, when these invalids are in the process of restoration to health; they must of necessity come back to "the sense of feeling," as this anæsthetic state departs, and what is the result? They say they feel worse, when they are getting stronger; they alarm their friends, perhaps mislead their medical advisers, but the process is nevertheless an appropriate and almost inevitable step along the upward path to convalescence. So that one might be pardoned who would say of neurasthenia: Its name is Legion and the truth is not in it. There are not a few points in the study of the downward and upward course of this affection whereat the alienist has the advantage—both in diagnosis, prognosis and in treatment—over the average practitioner. These patients are sometimes said to be supersensitive of conscience and are known to be self-reproachful because they accomplish so little. They especially feel the burden of household duties, and the fault is not infrequently ascribed to the *res angusta domi*, but in this view of the case, these conditions just named and all their congeners are contributive and non-essential. They are environments, extrinsic to the true trouble.

Sometimes these patients display their paradoxical abilities by extraordinary "spurts" of apparent endurance, but they have all to be "paid for" with a repentance and recoil that are quite sure to take the form of a renewed and intensified self-reproach, with all its harmful consequences.

Concerning "worry," Dr. Cowles says but little, but he does advise the breaking up of painful association, on the ground that a change from all the usual surroundings often does great good. Even homesickness may become an advantage—since it is a different and more natural form of "worry," that works to advantage when it displaces a morbid worriment. As to insomnia in these patients, the elimination of waste products is logically a prime element in the treatment. Sleep should be promoted by the use of as little narcotic drugs as possible. The tendencies of the latter are to spoil the appetite and to produce secondary morbid effects; a forced quietude of the brain cells may not promote their rest and nutrition. A drug having a disagreeable taste is the least harmful, as for example the paraldehyde mixture of Dr. Folsom of Boston, which consists of a few minims of that drug in a drachm of chloroform water, and this can be repeated a number of times; sulfonal is at present to be placed among the safest of the hypnotics. Warm baths and feeding at night answer very well in many cases.

In addition to this paper of Dr. Cowles, there is another by Dr. F. H. Williams on "Nourishment in Acute Disease." It is a practically conducted study, not altogether foreign to the subject we have been considering, and we will be glad if we shall be enabled to repeat some of its salient features in a future issue. There are also surgical and obstetrical contributions of more than ordinary interest, which we cannot even name.

MISCELLANY.

MITCHELL DISTRICT MEDICAL SOCIETY.—At the meeting of the Mitchell District Medical Society in Columbus, Ind., December 17, and 18, 1891, the following papers will be presented.

First day.—"Is the Treatment of Phthisis Pulmonalis a Success?" Dr. S. A. Rariden, Bedford.

"The Respiratory Complications of the Disease called La Grippe," Dr. Theodore Potter, Indianapolis.

"The Use of Alcohol in the Practice of Medicine," Dr. Homer J. Hall, Franklin.

"Tetanus, with Report of Cases," Dr. John D. Simpson, Bedford.

"Intubation of the Larnyx," Dr. Joseph Eichberg, Cincinnati.

"Intubation in Diphtheria," Dr. P. R. Taylor, Louisville.

"The Enlarged Tonsil," Dr. Dudley S. Reynolds, Louisville.

"Surgical Treatment for the Relief of Nasal and Naso-Pharyngeal Reflexes," Dr. L. C. Cline, Indianapolis.

"Correct Pronunciation of Medical Terms," Dr. M. N. Elrod, Hartsville.

Evening Session.—Public Address, Dr. G. C. Smythe, Greencastle.

Second Day.—"The Necessity of Surgical Knowledge in General Practice," Dr. J. R. Jenkins, Shelbyville.

"Posterior Spinal Sclerosis," Dr. H. M. Lash, Indianapolis.

"The Pathology of Nervous Exhaustion," Dr. A. B. Richardson, Cincinnati.

"Abdominal Section, with Report of Cases," Dr. Wm. H. Wathen, Louisville.

"Recurrent Pelvic Inflammation," Dr. L. H. Dunning, Indianapolis.

"Hæmorrhage at or near the Menopause," Dr. C. A. L. Reed, Cincinnati.

"Antiseptics in Rectal Surgery," Dr. Jos. M. Mathews, Louisville.

"Reflex Disturbances from Rectal Disease," Dr. J. M. Cook, Indianapolis.

"Skin Grafting," Dr. A. M. Owen, Evansville, Ind.

"Remarks on the Treatment of Urethral Stricture in the Male," Dr. W. N. Wishard, Indianapolis.

"The Radical Treatment of Inguinal Hernia," Dr. A. J. Banker, Columbus.

Hotel rates, $1.50 per day; reduced rates on railroads entering Columbus.

Columbus is one of the best towns in Indiana, and the local profession will spare no pains to make this meeting a success in every way.

ELIJAH S. ELDER, A.M.M.D., Indianapolis, President.

GEO. W. BURTON, M.D., Mitchell, Secretary.

Chairman of Committee of Arrangements,
GEO. T. MCCOY, M.D., Columbus, Ind.

THE MEDICAL SOCIETY OF THE MISSOURI VALLEY.—The next meeting of the Medical Society of the Missouri Valley will convene in Lincoln, Neb., Thursday evening, December 17, and continue in session on the 18th. Physicians reading papers or presenting cases at that meeting will send the undersigned their titles before December 1, so they can appear upon the programme, which will be mailed at that date. F. S. THOMAS, Sec'y.

Grand Hotel Annex, Council Bluffs, Ia., Nov. 15, 1891.

NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION.—The eighteenth annual meeting of the North Central Illinois Medical Association will be held in the City Hall, Streator, Illinois, on Tuesday and Wednesday, December 1 and 2, 1891.

GENERAL PROGRAM.

Ergot, James Tweddale, M.D., Washburn. Discussion, C. E. Davis, M.D., Peoria, E. T. Goble, M.D., Earlville.

Treatment of Miscarriage, W. A. Mansfield, M.D., Metamora. Discussion, A. H. Kinnear, M.D., Henry, B. L. Bonar, M.D., Streator.

My last One Hundred Obstetrical Cases, G. C. Lewis, M.D, Fairbury. Discussion, Geo. Ryon, M.D., Amboy, T. C. Fenton, M.D., Streator.

Hydrogen Gas Inflation with Negative Results in Stomach Perforation, E. W. Weiss, M.D., Ottawa. Discussion, E. P. Cook, M.D., Mendota, G. A. Zeller, M.D., Peoria.

Neoplasms of the Post-Nasal Space, J. H. Coulter, M.D., Chicago. Discussion, I. H. Reeder, M.D., Lacon, S. V. Hoopman, M.D., Roanoke.

Clinical Cases—Nasal Polypus and Gastric Catarrh, L. G. Thompson, M.D., Lacon. Discussion, J. C. Hatheway, M.D., Ottawa, C. D. Chalfant, M.D., Streator.

The Use and Abuse of Alcohol, W. L. Rabe, M.D., Dwight. Discussion, J. H. Braffet, M.D., Paw Paw, A. N. Richardson, M.D., Ohio.

Sciatica, C. C. Hunt, M.D., Dixon. Discussion, G. L. Burns, M.D., LaSalle, A. E. Owens, M.D., Dover.

Bright's Disease, H. Ziesing, M.D., Peru. Discussion, J. W. Edwards, M.D., Mendota, G. W. Bronson, M.D., Streator.

Prolapse of Vagina and Bladder in a Child Twelve Days Old, B. S. Roseberry, M.D., Lacon. Discussion, A. E. Palmer, M.D., Morris, W. L. Smith, M.D., Streator.

Has Typhoid Fever a Differential Pathognomonic Symptom? J. Stout, M.D., Ottawa. Discussion, J. S. Whitmire, M.D., Metamora, J. W. Pettit, M.D., Sheridan.

General Country Practice, W. G. Putney, M.D., Prairie Centre. Discussion, F. C. Robinson, M.D., Wyanet, F. M. Pendleton, M.D., Magnolia.

Special Program for Tuesday evening, December 1, 1891. Annual address of the President, by J. A. Freeman, M.D., Millington. Subject, The General Practitioner.

General address by W. T. Belfield, M.D., Chicago. Subject, Some Diseases of the Urinary Organs.

The first session will begin on Tuesday, December 1, at 10:30 A.M.

Members assigned to open the discussion of papers will be limited to ten minutes and volunteer remarks of others to five minutes.

Physicians eligible to membership are invited to unite with this Association and contribute papers, clinical reports or professional experience, and engage in the discussion of papers presented at its meetings.

Members of the dental profession and others interested in the study or progress of medicine and surgery or allied subjects are at all times cordially welcomed in attendance upon its sessions.

Copies of by-laws and membership blanks forwarded on application to the secretary.

J. A. FREEMAN, M.D., President.
WM. O. ENSIGN, M.D., Secretary.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 14, 1891, to November 20, 1891.

Capt. Edwin G. Gardner, Asst. Surgeon U. S. A., is relieved from further duty as attending surgeon and examiner of recruits in New York City.

Asst. Surgeon Benjamin L. Ten Eyck is granted leave of absence for one month, to take effect about the 15th inst.

Capt. Charles Richard, Asst. Surgeon U. S. A., is granted leave of absence for one month.

First Lieut. Charles F. Kieffer, Asst. Surgeon (recently appointed), is assigned to duty at Ft. Sheridan, Ill.

First Lieut. Frank T. Meriwether, Asst. Surgeon (recently appointed), is assigned to duty at Ft. Adams, R. I.

Capt. Edgar A. Mearns, Asst. Surgeon, is relieved from duty at Ft. Snelling, Minn., and assigned to duty at Ft. Mackinac, Mich.

First Lieut. Charles Willcox, Asst. Surgeon, is relieved from duty at Ft. Bowie, Ariz., and assigned to duty at Ft. Gaston, Cal.

First Lieut. Henry C. Fisher, Asst. Surgeon (recently appointed), ordered to Ft. Riley, Kan., for duty.

First Lieut. Henry A. Shaw, Asst. Surgeon (recently appointed), ordered to Ft. McKinney, Wyo., for duty.

First Lieut. Samuel R. Dunlop, Asst. Surgeon (recently appointed), ordered to Ft. Sill, Oklahoma, for duty.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending November 21, 1891.

Medical Inspector Theoron Woolverton, placed on the Retired List November 13, 1891.

Asst. Surgeon P. H. Bryant, detached from coast survey str. "Gedney," and wait orders.

Surgeon W. H. Jones, ordered to examination preliminary to promotion.